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Joseph Walker, A.S.C., photographs Rita Hayworth in Columbia's "Affair In Trinidad."

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- Engineered Photography For TV Films
- Camera Heater For Cold-weather Photography
- The Facts Of Light for Cine Amateurs

JUNE
1952

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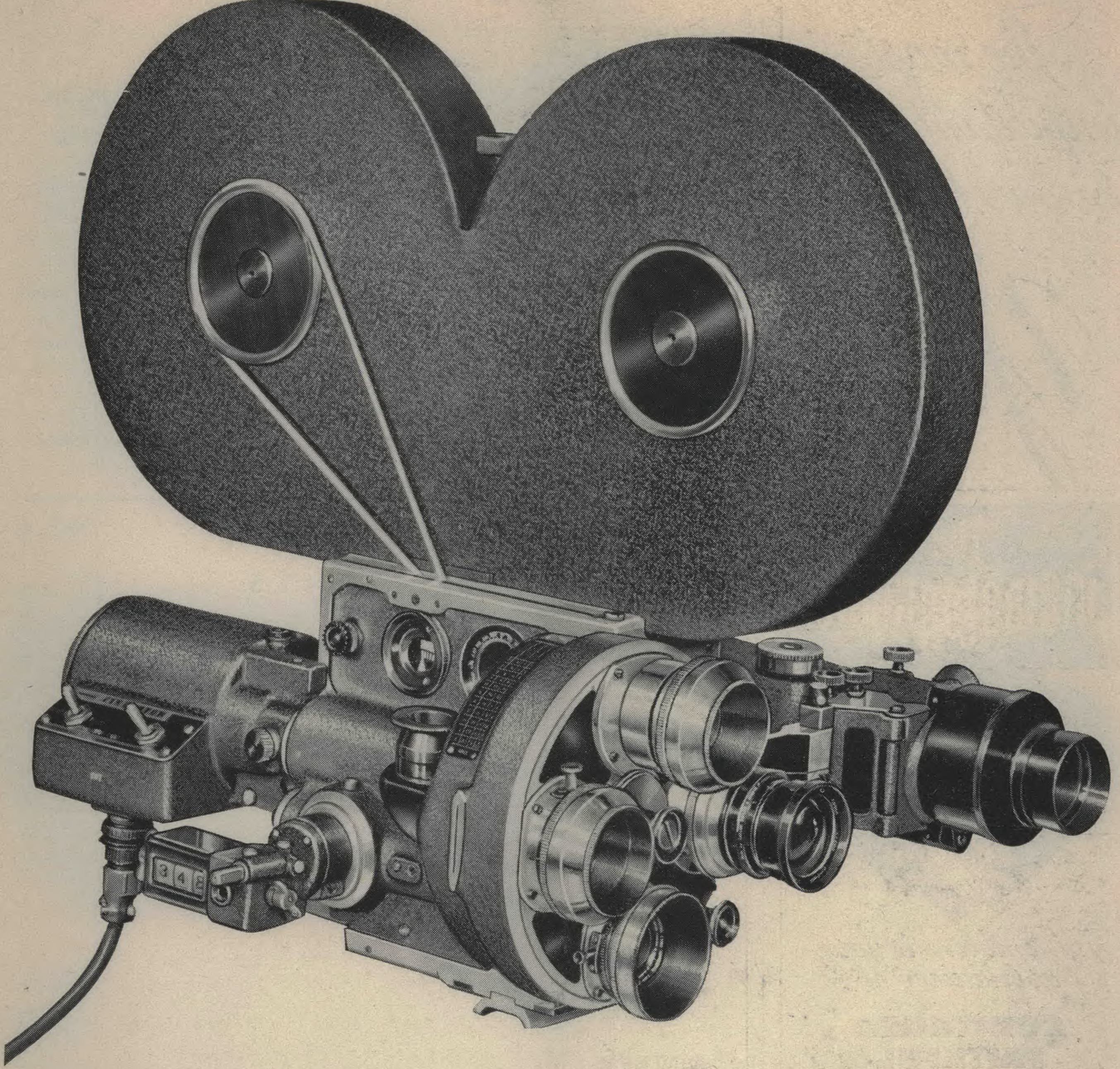

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PUBLICATION OF AMERICAN SOCIETY OF CINEMATOGRAPHERS

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ON THE COVER

RITA'S BACK and Walker's got her! It was Columbia Picture's ace director of photography Joseph Walker, A.S.C., (wearing hat) who was chosen to photograph Rita Hayworth following her return to Columbia to co-star in "Affair In Trinidad." Here camera operator Victor Scheurich focuses the low-angled camera on Miss Hayworth as she performs a torrid dance routine for an important scene in the picture.—*Photo by Lippman.*

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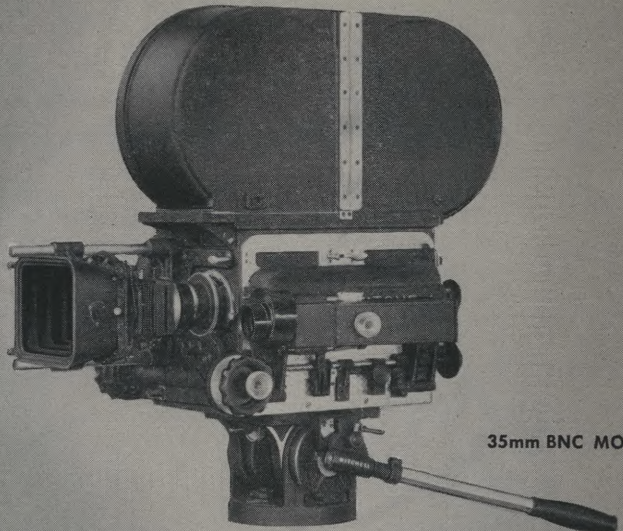

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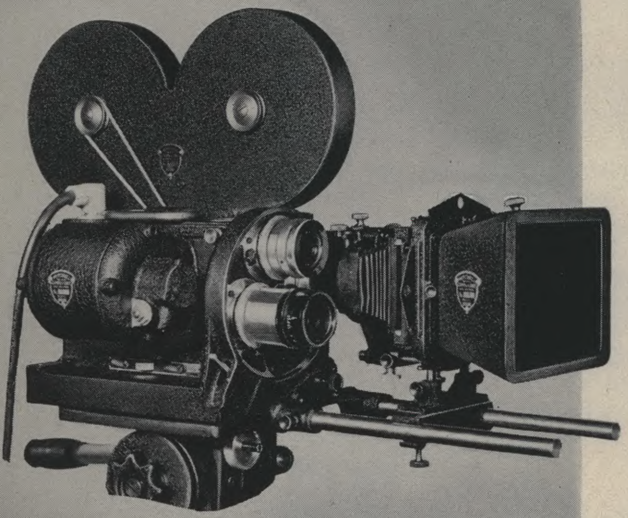

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Hollywood
Bulletin Board

HOLLYWOOD'S scenic artists last month received scroll of achievement from the American Society of Cinematographers. Presenting scroll to artist's Guild prexy Phil Raigule (right) is A.S.C. president Charles G. Clarke. Adding a decorative note is movie starlet Marie Windsor.

IN TURNABOUT gesture of appreciation, artists presented A.S.C. members with a framed watercolor done by scenic artist John Coakley (3rd from right). Others from left to right are Cleo Moore, Mack Sennett, Charles Clarke, Phil Raigule, and Marie Windsor.

A.S.C. HOSTS SCENIC ARTISTS—For the first time in Hollywood's history, perhaps, a major craft honored another creative craft of the studios last month when the American Society of Cinematographers hosted the industry's scenic artists at a banquet May 28th at the Society's clubhouse, and presented the artists with a scroll of recognition for their contributions to the motion picture industry.

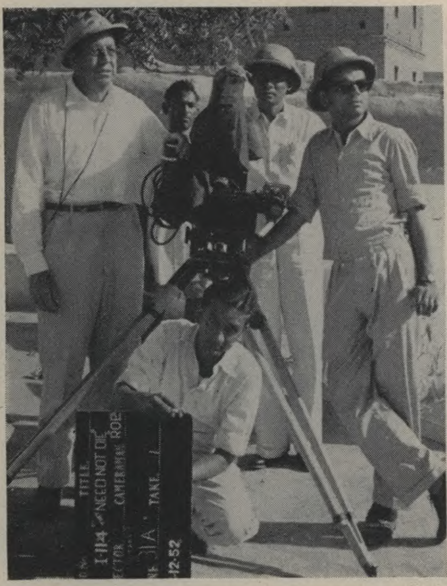
Present, besides A.S.C. members, were twenty-five members of the Scenic Artists Guild, headed by president Phil Raigule.

Said Raigule, in accepting the scroll: "We are very grateful to the A.S.C. for extending its helping hand and aiding us to attain recognition in the industry. In the early days of motion pictures in Hollywood, the artists and cameramen enjoyed a memorable *esprit de corps* . . . We scenic artists will ever be grateful to the cinematographers for being the first to give public recognition to the importance of our craft."

As a token of this appreciation, president Raigule, in behalf of his fellow artists, then presented a framed watercolor to members of the A.S.C., as a token representative of their art. The painting was done by scenic artist John Coakley. Accepting the gift in behalf of the Society was Charles G. Clarke, who directed that it be hung in the Board Room of the Society's clubhouse.

Toastmaster of the evening was Harry Crocker, well-known motion picture columnist and director of public relations for Charles Chaplin. Other guests of honor included Mack Sennett, who spoke briefly of his recent visit to the Film

(Continued on Page 259)

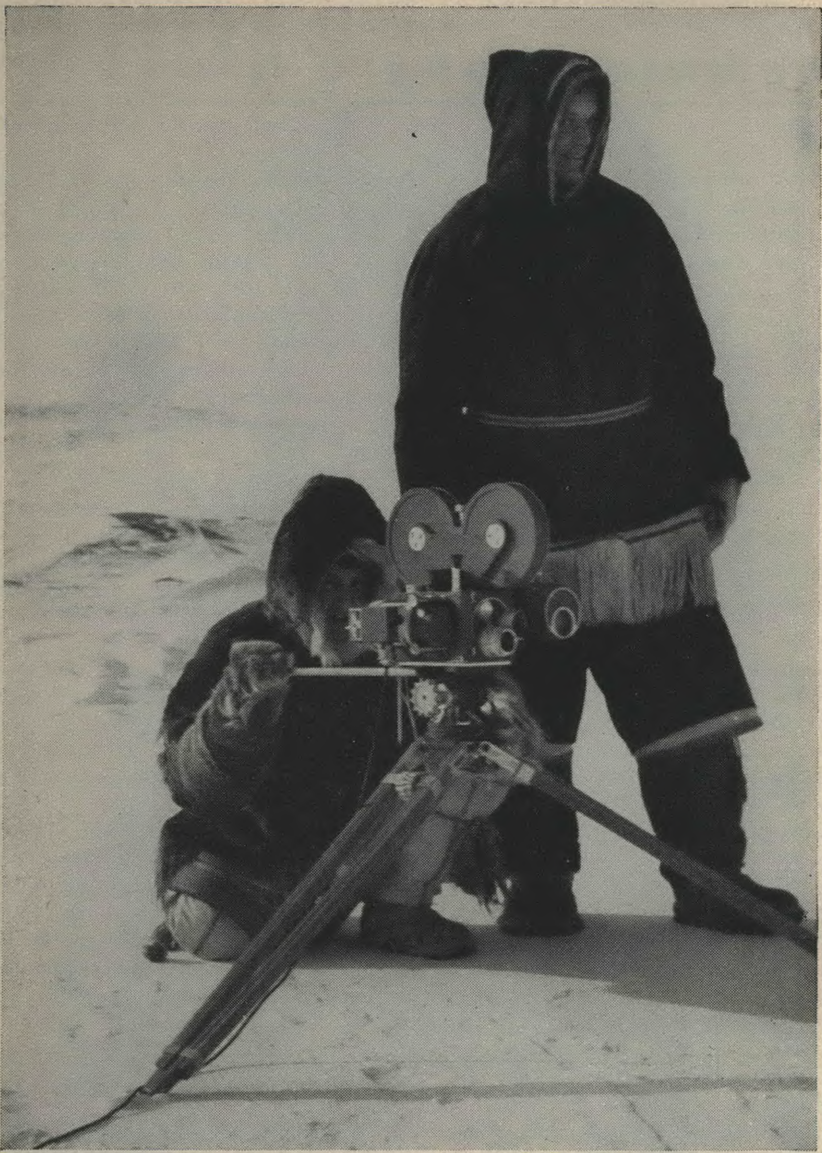


◄

IN NEW DELHI, India, is Guy Roe, A.S.C., (left) directing the photography of "They Need Not Die" for Cascade Pictures. Others in picture are camera coolie Chotu, operator Tara Dutta, 1st Asst. S.N.S. Shastry, and (below camera) Ashok.

►

WILLIAM MELLOR, A.S.C., last month was presented with Silver Spurs award by Reno Chamber of Commerce for the best photography of a western picture released during 1951. Mellor's lensing of MGM's "Across The Wide Missouri" won him the trophy pictured here.



Director Douglas Wilkinson and Cameraman Jean Roy are seen working in the Canadian Arctic on a production for Canada's National Film Board. Their Maurer camera operated satisfactorily on this assignment at temperatures varying from 60° F. to —50° a range of 110°!

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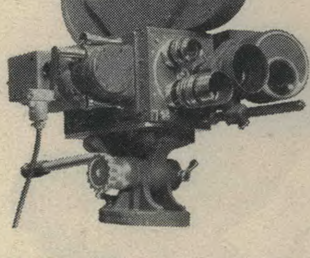

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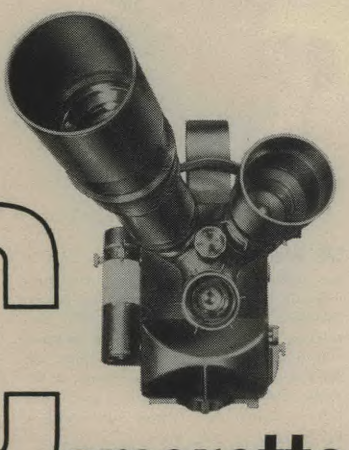

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Cinematography REVIEWS

Of Pictures Previewed in Hollywood Last Month

PAT AND MIKE — *Photographed in black-and-white by William Daniels, A.S.C. Produced by Lawrence Weingarten and directed by George Cukor for Metro-Goldwyn-Mayer Pictures.*

Slick is the word for William Daniels' photographic treatment of this sprightly story of Pat, a national tennis and golf champ (Katharine Hepburn) and amiable Mike (Spencer Tracy) — the driving genius who owns 50% of Pat, 100% of a fighter (Aldo Ray) and all of a race horse, and who manages Pat in her professional sports career—for a percentage of the take.

Daniels has given this production his usual accomplished camera treatment—a superior brand of photography which years ago earned for him the tag of "glamour cameraman." There was no call for the glamour treatment for any of the cast in this picture, however, Daniels has gracefully toned his lighting to match the rugged "outdoorsey" atmosphere of this story of the competitive sports world.

It is his subtle use of booster lights in the exteriors that highlights Daniels' photography of scenes on the fairways and in other outdoor shots. The thing you miss is the *obvious* fill light from boosters so common in so many pictures today. Here, Daniels has underplayed the booster lighting; it is scarcely perceptible, yet the result is more natural appearance of the players and others appearing in outdoor scenes, such as the gallery following the golfers and the spectators watching the tennis matches.

Once or twice you will see artful use of backlighting — not too often — but enough to remind that Daniels has lost none of his glamour technique. You'll have to look close, though, to detect all this, because the laughs come quick and often, and the story grips your interest right down to the final frame.

DENVER & RIO GRANDE—*Photographed in Technicolor by Ray Rennahan, A.S.C. Produced by Nat Holt and directed by Byron Haskin for Paramount Pictures Corp.*

Ray Rennahan, one of Technicolor Corporation's stable of specially-trained color cinematographers, has developed over the years a sure, smooth individual style of outdoor color photography. "Denver & Rio Grande" afforded him unlimited possibilities for bringing to the screen colorful panoramas of the rugged Colorado Rockies, where producer Nat Holt has staged a vivid historical drama of the building of the famed "D&RG" railway just before the turn of the century.

Perhaps the thing one remembers most, after leaving the theatre, is the fact blatant color never once distracted attention from the story or action. The camera has kept clear of spectacular scenics except where they play a direct part in unfolding the story.

In shooting these outdoor epics for Holt, Rennahan has licked the problem of getting the bulky Technicolor camera into difficult positions in rugged terrain, in order to get the "right angle" for a shot. Sometime ago, Rennahan discovered the "Blue Goose," a remarkable mobile camera truck with 4-wheel drive, having a fork-lift on the front with a platform for camera and cameraman. It will take a Technicolor camera and crew anywhere except directly up the face of a cliff. You'll see in this picture the kind of shots possible with this equipment in skilled hands.

Edmond O'Brien, Sterling Hayden, Dean Jagger, Lyle Bettger, J. Carol Naish and pert Laura Elliot are starred in this production that sees the Denver & Rio Grande and its backers triumph over a rival company after a hectic 90 minutes of skullduggery, gun play, and a minimum of love scenes.

THE PRIDE OF ST. LOUIS—*Photographed in black-and-white by Leo Tover, A.S.C. Produced by Jules Schermer and directed by Harmon Jones for 20th Century-Fox.*

"The Pride of St. Louis" is destined also to become the pride of 20th-Fox during 1952. Starring Dan Dailey as Dizzy Dean, colorful ballplayer, it is Dailey's best starring role to date and one of the most likeable screen stories you'll see in many a moon. The picture encompasses the history of ballplayer Dean from his sandlot days to his fade-out as a popular figure of the professional ball clubs.

Brimful of pathos as well as humor, the story posed a wide range of camera treatment for Leo Tover whose cinematographic skill has embellished many a Fox production over the years. Lighting of the interiors shows a pleasing restraint and exhibits Tover's flair for imparting a homey atmosphere to interiors through skillful use of general set lighting without resorting to tricks or effects.

If you are a baseball fan, you'll thrill at Tover's camera coverage of action on the diamond—the best to be seen in any

(Continued on Page 268)

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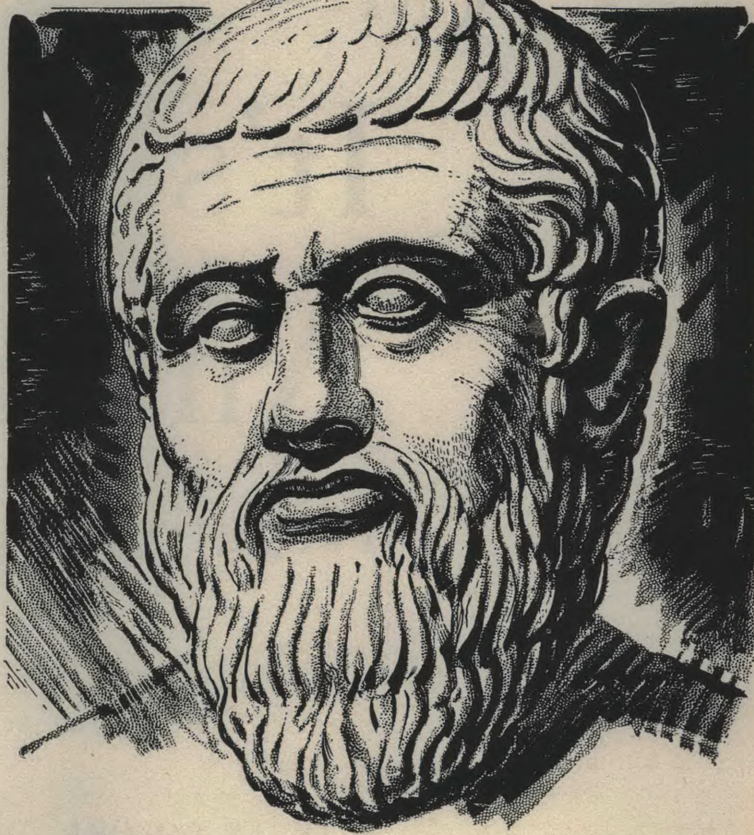

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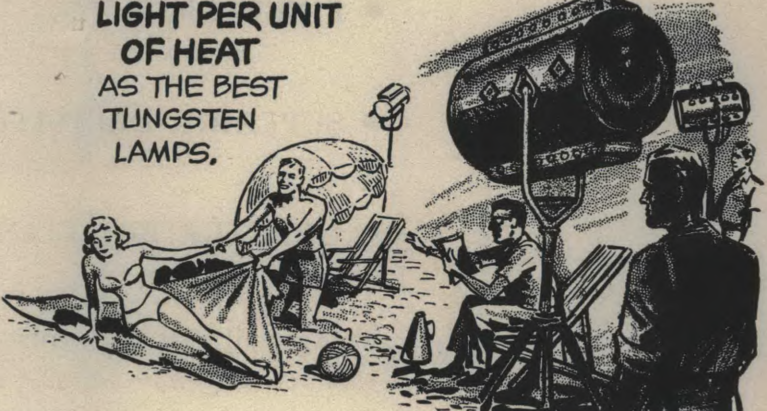

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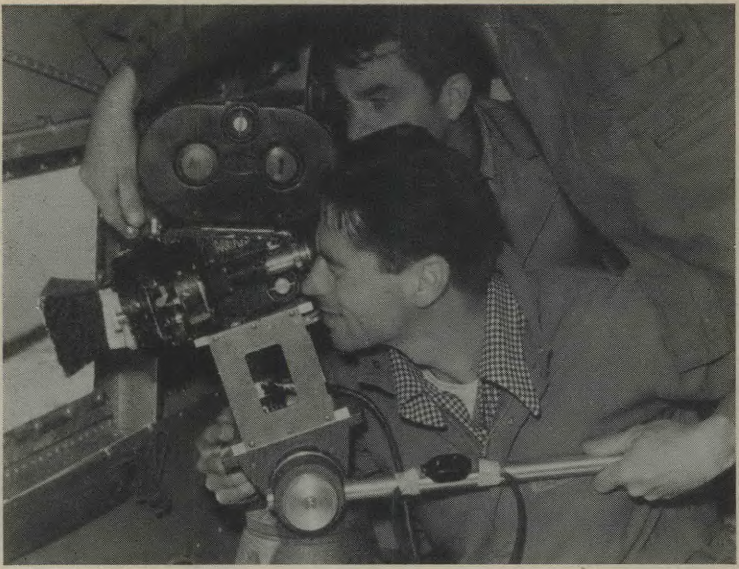

Charles 'Scotty' Welborne, Famous Hollywood Camera Man, with his Arriflex 35, shooting from a plane over Korea. Behind him is Owen Crump, writer and director of "One Who Came Back."

Writes 'Scotty' Welborne: ". . . The two cameras we took with us, and used throughout the picture, were both Arriflex 35s. They are surprisingly light in weight, and allowed for complete mobility. We shot more than twenty thousand feet of film, under all kinds of conditions, and not once did we run into camera trouble of any kind. It is interesting to note that not one foot of stock film was used in the picture . . . everything was shot with an Arriflex.

"I found it an excellent piece of equipment. And, if I had it to do again, I would again select the Arriflex, because of its portability, ease of loading, fast changing turret, uninterrupted through-the-lens viewing and focusing while shooting, and complete dependability."

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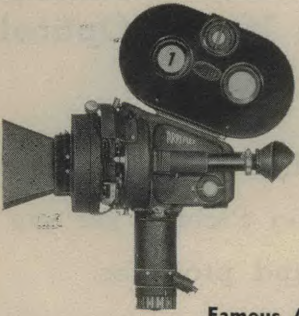

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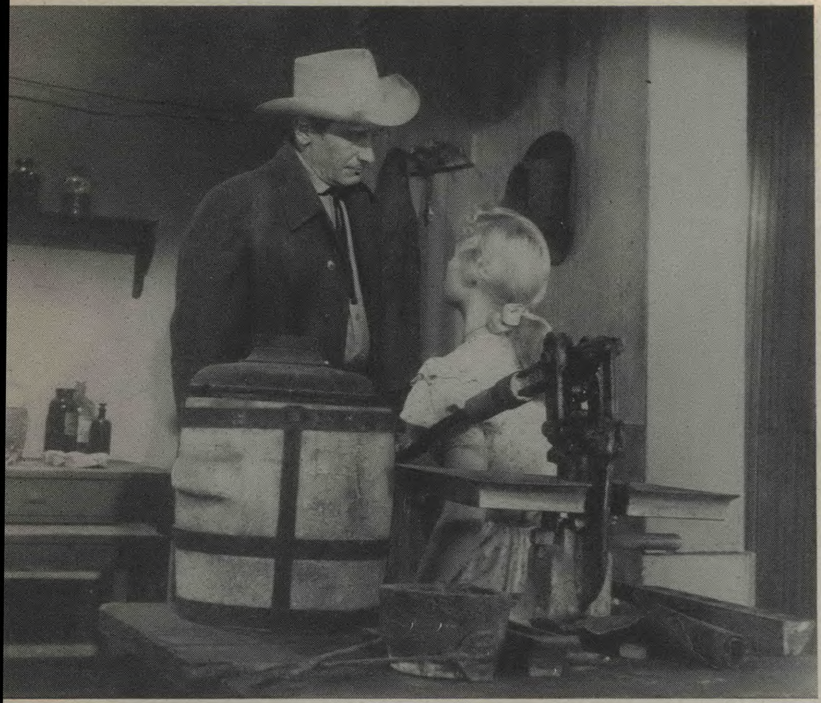
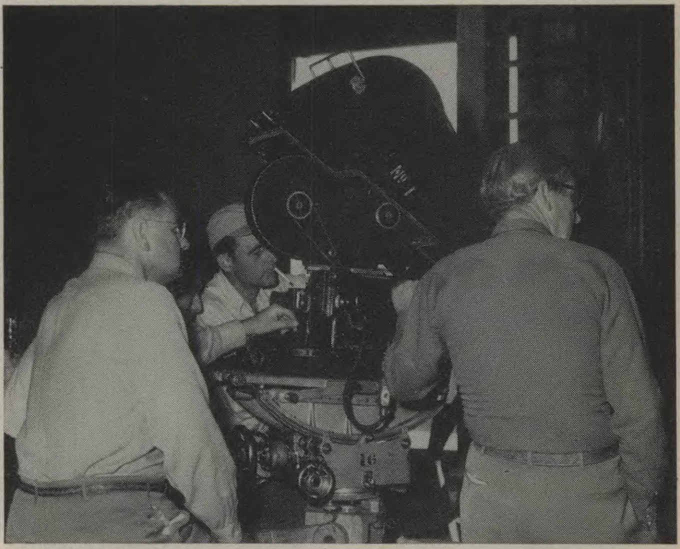


TYPICAL of the new composition format for TV films introduced in Hollywood recently is this scene in which foreground objects assume prominence and readily identify scene of action as players read lines in background.



WATCHING cameraman Gordon Avil (right) shoot scene for "Frontier Detectives" TV film is technical advisor Dr. Harold R. Lutes who earlier pre-planned the photography with Avil and script-writer Roscoe Thomas.

Engineered Photography For Television Films

Makers of "Frontier Detectives" TV film series introduce a new scientific approach to photography aimed at improving audience interest.

By LEIGH ALLEN

LONG SCIENTIFIC STUDY of the viewing habits of television set owners and of the factors directly affecting these viewing habits form the basis of a new production approach in the making of films for television.

The "Frontier Detectives" video film series, now being made at General Service studios in Hollywood by Murphy-Thomas Productions and photographed by Gordon Avil, is perhaps the first ever to be planned and photographed according to scientific findings aimed at developing maximum viewer interest.

Murphy-Thomas is the first producer of TV films to have on its production staff a technical advisor on optics and photography. He is Dr. Harold R. Lutes, president of H-L Instrument Company, San Gabriel, Calif., and an engineer in ophthalmic and photographic optics.

In the early days of television, when complaints of undue eye-strain induced by watching TV threatened the future of the medium, Dr. Lutes began studies which produced a by-product observation: that motion pictures made especially for theatres are difficult to watch on the smaller screens of television sets, even when reception is sharp and clear. The mechanics of both the photography and cutting of such films, Dr. Lutes found, induced certain irregularities in both the picture continuity and in the visual flow of the picture which in turn induced distractions for those viewing the films on home receivers.

For one thing, Dr. Lutes found, many video viewers rarely were able to "lose themselves" in a televised dramatic play to the same extent they do when seeing a picture on the big screen of a movie theatre. The result, he said, is that too many TV viewers fail to get the most out of television; distractions and disorientation more easily occur when there is not complete absorption in the televised program.

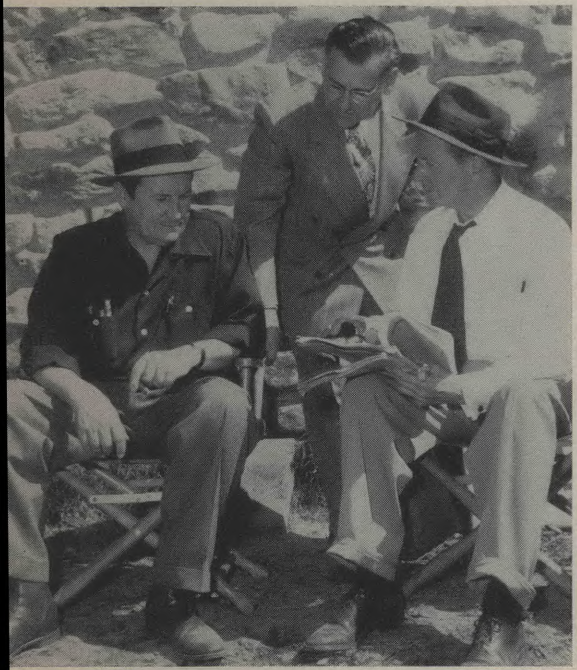
Much of the fault lies with the smaller screen of television and the great difference in the viewing conditions in the home compared to the large theatre. We are less able to associate ourselves with a story as it unfolds on TV than when watching the same action more life-size and life-like on the theatre screen. With television, therefore, there is greater need to introduce into all scenes more pronounced elements of orientation, so that the viewer will not become "lost" when his attention is diverted from the picture, as it is so often in home viewing of TV.

It is here that Dr. Lutes introduces his theory of space orientation and three-dimension illusion, and explains how the proper selection of lens size and camera angle for the respective take can give the scene the most dynamic visual impact in TV film photography.

Describing his findings in an address before a number of TV film producers and technicians in Hollywood recently, Dr. Lutes demonstrated, by means of screened slides, how space orientation of objects or of a given locale or situation can be enhanced through proper selection of camera angle, lens size, proper lighting, or all three. He pointed out it was not only important to fully orient the TV viewer at the beginning of the story, but to maintain this orientation throughout the picture. He added that far too many TV films lose orientation through improper or careless cutting as well as in inadequately planned photography. Much of this orientation depends, he said, on maintaining a strong illusion of three-dimension in all scenes, yet with a normal point of view —a matter of proper composition of scenes in which the familiar compositional rule of using foreground objects is employed to create the maximum illusion of depth. In this way locale is quickly identified, and the special relationship of objects is readily apparent. The result inclines the observer to become a part of the action and live the story.

An example of this orientation principle, as applied to scene composition in the series of "Frontier Detectives" video

(Continued on Page 260)



CAMERA ANGLES and perspective for "Frontier Detectives" video films are worked out for best results on the TV screen, by producer Stanley Murphy (left), consultant Dr. Harold Lutes, and associate-producer Roscoe Thomas who also writes the scripts.

N.B.

Note

A. S. C. Presents Scroll To Desilu Productions

Lucille BALL Desi ARNAZ Show
"I Love Lucy"
DESI ARNAZ
PREZ

LUCILLE BALL, co-star of the "I Love Lucy" TV show, holds achievement scroll presented Desilu Productions by American Society of Cinematographers honoring the industry's No. 1 comedy-drama TV program. Others, from left to right, are Desi Arnaz, cinematographer Karl Freund, A.S.C., Charles G. Clarke, A.S.C. president, Marc Daniels, director of the show, and Vivian Vance and William Frawley who play Ethel and Fred in the show.

CITING "I LOVE LUCY" as one of the better television programs made on film, and jointly commending the producers and staff for the consistent high quality of the show's photography, the American Society of Cinematographers last month presented Desilu Productions, the show's producers, with the Society's Scroll of Achievement.

Hosting A.S.C. members and their wives on Stage 2 of General Service Studios, in Hollywood, where each week the "I Love Lucy" show is filmed, the company re-enacted a sequence from an earlier show, then screened the show in its entirety. Purpose was to demonstrate to the cinematographers how TV's No. 1 comedy-drama program is put together and photographed, affording opportunity for comparison between the live and the filmed versions.

Afterwards, A.S.C. president Charles G. Clarke presented the scroll to Lucille Ball who accepted in behalf of Desilu Productions. Text of the scroll, which appears over the signatures of

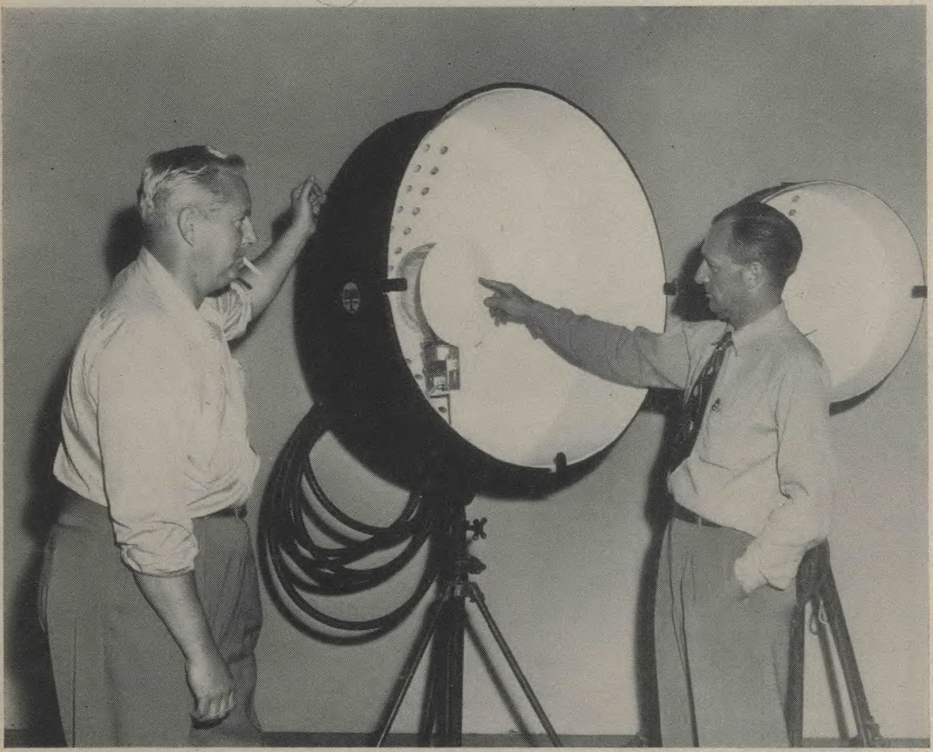
(Continued on Page 268)

SOME OF THE 125 A.S.C. members and wives who attended special presentation of the "I Love Lucy" show in Hollywood last month. Rapt attention indicates tremendous interest taken in the proceedings, which demonstrated unique methods employed by Desilu Productions in putting the show on film.

Free loading!!

Economy Set Lighting With Cone Lights

New type reflected light units introduced by Columbia Studio technicians cut rigging and operation costs.



CONE LIGHT, reflected-light type unit for general set illumination, was designed by Columbia Studio technicians Larry Butler (left) and Walter Stebbins. Lights are manufactured on the lot in three different sizes, may be used overhead or on the stage floor. Stebbins points to baffle in front of incandescent lamp, which shields direct light from set, intensifies reflected light.

THE NEWEST in a "shadowless" reflected light source for illumination of motion picture sets is the cone light developed at Columbia Studios in Hollywood by Walter Stebbins, Columbia's electrical department head, and Larry Butler, head of the studio's photographic effects department.

Having begun explorations in reflected light almost simultaneously with John Arnold, A.S.C., who subsequently developed a similar lighting unit at Metro-Goldwyn-Mayer studios,* Stebbins and Butler pursued their theories and came up with a lamp structurally different, which they claim has advantages not found in other set lighting units of similar type.

The structural difference in the Columbia light is the cone-shaped reflector. The Arnold lamp reflector is the conventional concave type. Both lamps have a metal baffle plate in front of the incandescent light globe, which prevents light rays from falling directly on the set. The baffle also intensifies direction of the light towards the reflector. The 45° cone angle of the Columbia light was determined by mathematical calculation and exhaustive tests to give a better quality of reflected light. The Stebbins-Butler theory is that the flat-surfaced conical reflector gives a much softer light having greater penetration than that of curved-surface reflectors. With the former, the light rays bounce back and forth in straight lines between the flat reflector surfaces and emerge toward the set in a highly diffused beam of light having a wide spread and incapable of casting any appreciable shadow. Hence the term "shadowless," which is employed in describing the light's peculiar illumination qualities.

"When we began our developments," said Stebbins, "we were searching for a wide-range light source that would give the cameraman a very soft, diffused light—one that could be used for general set lighting, yet would require a minimum of units, and where all that would be necessary is add a kicker and perhaps a key in order to have a set ready for

(Continued on Page 264)

CONE LIGHTS proved ideal illumination source for lighting large sets for Columbia's "5000 Fingers of Dr. T." Here lights are shown used in clusters overhead, and on the floor in conjunction with conventional lighting units. Note absence of power cables on floor.

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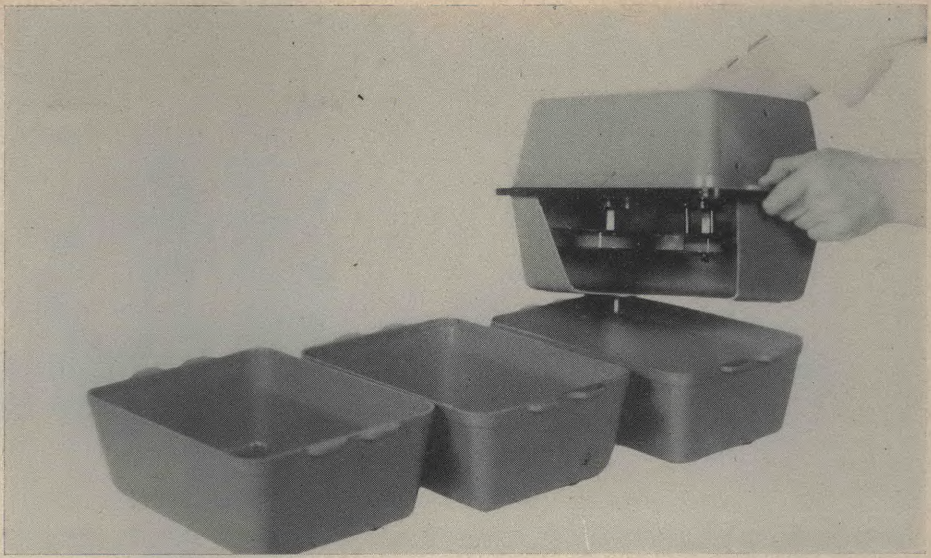
*See "Reflected Light for Color Photography," November, 1951, American Cinematographer.



CUTAWAY VIEW of interior of Micro Record film processor shows lighttrap which is placed over film to permit daylight operation. Reversal and rotation of film on reels is automatic by means of compact 110-v motor drive.

A Compact, Portable Motor-driven Developing Outfit For Movie Film

Automatically processes up to 200 feet of 35, 16, or 8mm film in less than one hour.

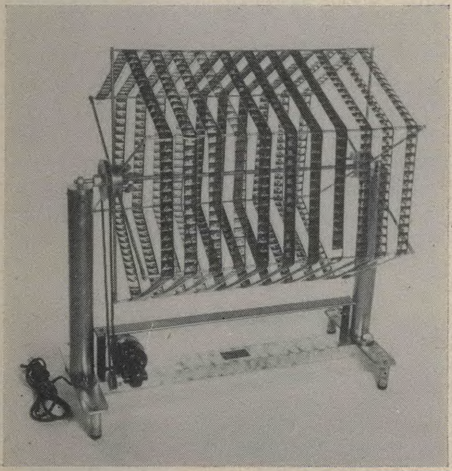
By ALVIN D. ROE

THE NEED FOR a small, compact automatic film processing unit for laboratory or field use has been met by the Micro Record Corporation, New York City, which this month announces a new, improved model of its portable Micro Record film processing machine. Small and light in weight, the equipment is ideal for a wide range of motion picture needs — from those of the home movie amateur who likes to process his own films, to the studio cameraman who needs a quick, efficient means for developing film tests on location. Television stations, too, are finding the equipment ideal for quick-processing of local newsreel footage. The equipment also is being used with success for processing microfilms, and X-ray films.

The compact Micro developing tank provides a simple, efficient, economical and speedy means for processing long lengths of film—100 to 200 feet—where the quantity of film does not warrant the expenditure of the several thousands of dollars required for the more highly productive installations. Movie film can be processed immediately after shooting and scenes retaken if found necessary.

The processing equipment, pictured above, requires but one gallon of solution. Tanks and protective hood over mechanism are made of newly formulated plastic material that is tough and corrosion-resistant. The material, being non-conductive, insures complete electrical insulation. The spindles that carry the reels in the solutions are of stainless steel and are mounted in precision ball bearings with sealed-in lubrication. Film reels are of tough plastic construction. The tank and hood measures approximately 13½" x 8⅝" x 10¼". Net weight is only 11 pounds.

The processing unit consists of the motor-driven film-moving mechanism, loght trap, 3 nested tanks, 3 feet of rubber hose with faucet adapter, and one pair of reels. The motor is 110-volts, 60 cycles A.C. Other motors also are available for 220 volts or 110/220 volts.



COMPANION equipment to Micro Record film processor is this portable all-metal film dryer with built-in heating unit. Dryer also is powered by 110-volt motor.

For simple, daylight operation, the film to be processed is placed on the spindles of the tank. The light trap is then placed over the film and all processing operations are conducted in daylight. Separate tanks are provided for the various solutions, and the mechanism, with the film in motion, is transferred from tank to tank in the proper time and sequence.

The film travels back and forth on the reels in the solutions for the entire duration of the processing period. The reversal of the rotation of the reels is governed by five feet of leader and an equal length of trailer. When the reel that is being unwound is exhausted to within five feet of the end, rotation of both reels is instantaneously and automatically reversed. This action is performed smoothly and with no jerk on the film, permitting the solutions to remain between the layers of film.

There are no adjustments required for processing various lengths of film; any length up to 200 feet between the leader and the trailer can be processed in less than one hour. Where the loss of the leader or the trailer cannot be afforded, a length of scrap film, secured to each end of the film to be processed with plastic tape, can be substituted.

Continuous agitation caused by the repeated passage of the film through the solutions assures brilliant and uniform images.

Washing the film is accomplished in the tank provided with a hose. This may be attached to any water faucet to supply a continuous circulation of fresh water. Film, other than reversal, requires no attention from the operator until after the final washing, when it is removed from the tank and placed on a drying rack. The method is clean and requires no especial skill; daylight operation eliminates the possibility of error often experienced in darkroom procedures. Where reversal film is to be processed, the use of a transparent tank (optional equipment) is required.

(Continued on Page 268)

YESTERDAY—Oil heaters were used in the early '20's to keep movie cameras warm on location in cold weather. Dan Clark, A.S.C., (2nd from right) shows how heater was placed under hooded camera.

TODAY—MGM studio cameras operate efficiently in the coldest weather. Small electric heater inside camera maintains normal operational temperature for mechanism. Pad over magazine is soundproofing expedient.

Camera Heater For Cold-weather Filming

Small, battery-operated unit is adaptable to almost every make of studio camera.

By RALPH LAWTON

ALTHOUGH most of the studio motion picture cameras in use today represent the ultimate in precision engineering and utility, the matter of cold weather operation generally seems to have been overlooked by camera manufacturers. The result is that when studio cameras are taken on location in winter months or used at night when temperatures are low, trouble is encountered with the mechanism slowing down due to the effect low temperatures have on the lubricants.

Unless cameras used on such assignments are treated with special lubricants in a so-called "winterizing" process, invariably they will give trouble in cold weather. Studio camermen have had to deal with this problem ever since the beginning of feature film making, and interesting are the numerous expedients that have been tried in an effort to keep cameras running at normal speed in below-freezing temperatures. Small 110-volt light bulbs, with the surface opaqued, have been mounted inside the camera as heating elements; oil heaters have been placed beneath the tripod-mounted camera covered with a quilted hood, as shown in the photo above; and other, more or less ingenious expedients have been tried — all without much success.

Only recently has a satisfactory, trouble-proof camera heating device been developed. It may easily be adapted to almost any type and make of studio motion picture camera, including Technicolor cameras. Its development came about during preparations to shoot MGM's production, "The Wild North," in Sun Valley, Idaho, during winter. John Arnold, A.S.C., MGM's executive

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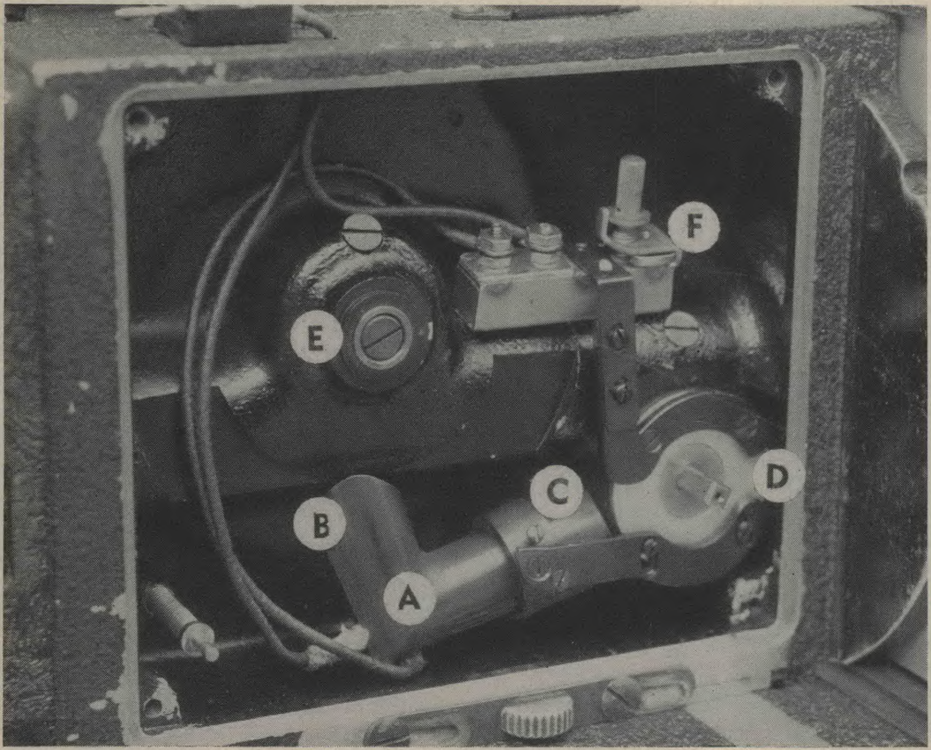


VIEW of Mitchell camera interior showing heater unit and thermostat installed. Dual unit A has heater element at B, which heats shaft E, and another at C, which heats shaft D. Adjustable thermostat is shown at F.

Carbon Arcs For Motion Picture Set Lighting

Small in size, high in brightness, arcs are superior in penetration, area coverage, and shadow sharpness—ideal for color photography.

By HENRY B. SELLWOOD

Editor, International Projectionist

(THE FOLLOWING article is reprinted by permission from the December, 1951, issue of "International Projectionist."—EDITOR.*)*

THE WIDESPREAD industry interest generated by Technicolor Corporation's recent development of a more sensitive negative film combination intended for use with light of 3350 K. color quality, suggests another look-see into the technical aspects of carbon arc as contrasted with incandescent ("inkie") lighting for motion picture sets.

Studio light sources have a direct relation to theatre projection in terms of the old adage: "If picture quality isn't on the film, one can't put it on the screen."

Basis for this discussion are the arc and incandescent spotlamp comparisons shown in Fig. 1. The optical system used with carbon arcs is shown in Fig. 2. The incandescent lamp optical system differs only in the addition of a spherical mirror positioned behind the light source to gather otherwise lost radiation and direct it back through the source and into the useful beam.

The carbon arc optical system affords a wide range of beam spreads from 10-13° at a minimum spot to 44-48° at full flood. Total lumens in the beam at various beam spreads are shown in Fig. 1. At full flood the closer spacing of the lens from the light source gives a greater pickup of light than at minimum spot.

At a single beam spread, the light intensity varies approximately as the inverse square of the distance from the lamp. It is thus possible to assign for each beam spread an apparent candlepower value which can be divided by the square of the distance to obtain the

(Continued on Page 274)

Lamp	Light Source	Fresnel Lens Diam.		Beam Spread For 10% of Center Intensity	Beam Spread For 50% of Center Intensity	Apparent Candle Power at Center of Beam	Beam Lumens*	Approximate Apparent Source Size-Inches** Visual	Approximate Apparent Source Size-Inches** Photometric
Carbon Arc Lamps									
Type 450 "Brute"	225 amp. 16mm Carbon	24"	Minimum Spot	12°	5°	10,000,000	117,000	23.5	13.3
			Flood	48	35	1,000,000	260,000	4.1	3.4
Type 170	150 amp. 16mm Carbon	20"	Minimum Spot	10	4.4	5,700,000	47,000	19.5	9.7
			Flood	48	42	300,000	130,000	1.8	1.2
Incandescent Tungsten Lamps									
Type 414 "Senior"	5KW bulb	14	Minimum Spot	13	8	1,050,000	18,000	13.3	8.3
			Flood	45	36	120,000	37,500	3.6	3.0
Type 410 "Junior"	2KW bulb	10	Minimum Spot	12	8	420,000	6,900	9.0	5.7
			Flood	44	39	40,000	14,000	2.8	2.2

*Boundary Intensity 10% of center intensity.

**Horizontal dimension as viewed visually and as measured photometrically from the beam through the Fresnel lens.

FIG. 1—Characteristics of carbon arc and incandescent tungsten studio lamps.

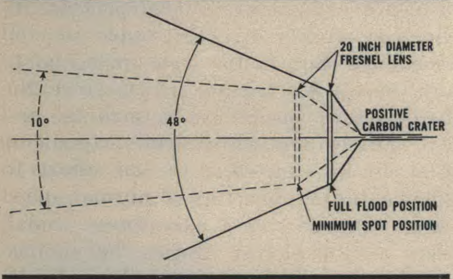


FIG. 2—Optical system of the Type 170 lamp.

		Projection Distance — Feet			Range of Projection Distance for ±20% Variation of Light Intensity			Beam Diameter*** — Feet			Apparent Angle Subtended by Light Source — Degrees****		
Lamp	Beam Spread	150 Foot-Candle 3350°K. Film *	300 Foot-Candle Daylight Film **	450 Foot-Candle Daylight Film **	150 Foot-Candle 3350°K. Film *	300 Foot-Candle Daylight Film **	450 Foot-Candle Daylight Film **	150 Foot-Candle 3350°K. Film *	300 Foot-Candle Daylight Film **	450 Foot-Candle Daylight Film **	150 Foot-Candle 3350°K. Film *	300 Foot-Candle Daylight Film **	450 Foot-Candle Daylight Film **
Carbon Arc Lamp													
Type 450 "Brute"	Minimum Spot	182	173	141	36.4	34.6	28.2	38.3 (15.9)	36.4 (15.1)	29.7 (12.3)	.35	.37	.45
	Flood	58	55	45	11.6	11.0	9.0	51.3 (36.6)	49.0 (34.7)	39.8 (28.2)	.28	.30	.36
Type 170	Minimum Spot	138	131	107	27.6	26.2	21.4	24.2 (10.6)	22.9 (10.1)	18.7 (8.2)	.34	.35	.43
	Flood	32	30	24	6.4	6.0	4.9	28.2 (24.4)	26.7 (23.0)	21.7 (18.7)	.18	.17	.24
Incandescent Tungsten Lamps													
Type 414 "Senior"	Minimum Spot	84	37	31	16.7	7.5	6.1	19.1 (11.7)	8.5 (5.3)	7.0 (4.3)	.47	1.06	1.30
	Flood	28	13	10	5.6	2.5	2.0	23.4 (18.4)	10.5 (8.3)	8.5 (6.7)	.51	1.13	1.39
Type 410 "Junior"	Minimum Spot	53	24	19	10.6	4.7	3.8	11.2 (7.4)	5.0 (3.3)	4.1 (2.7)	.51	1.15	1.41
	Flood	16	7	6	3.2	1.4	1.2	13.2 (11.5)	5.9 (5.2)	4.8 (4.3)	.64	1.44	1.75

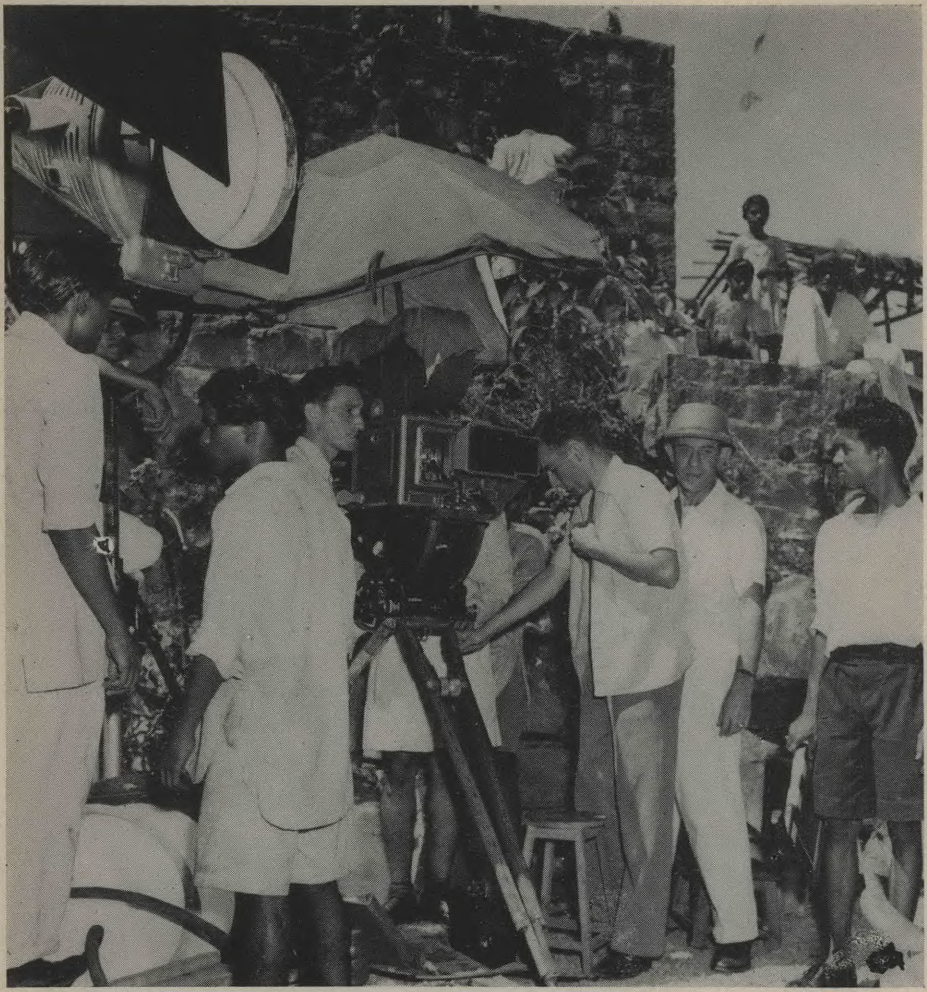
*Types 450 and 170 with filter of 50% transmission; Types 414 and 410 unfiltered.

**Types 450 and 170 with filter of 90% transmission; Type 414 and 410 with filter of 40% transmission.

***Values in parentheses are for boundary intensity of 50% of center; others are for boundary intensity 10% of center.

****The sun subtends an angle of 0.5 degrees; sources smaller than this will produce sharper shadows and those larger will produce fuzzier shadows.

FIG. 3—Lamp performance for equivalent photographic effect at the center of the beam with various types of color film.



ON LOCATION in India with a Technicolor camera. Director of photography Ernest Haller, A.S.C. (wearing helmet) guides his Indian and British assistants in lining up the camera for a scene for "Monsoon." Camera assistant Richard Alport is left of Haller, while Ernie Day, Technicolor assistant, looks on from opposite side of the camera.

Assignment In India

Climate and lack of experienced technicians handicap U. S. cameramen working in India, says Ernest Haller, who recently filmed "Monsoon" and "Jhansi-Ki-Rani" there in Technicolor.

By FREDERICK FOSTER

INDIA vies with Africa as the No. 1 locale for "off the beaten track" motion pictures in the growing trend among Hollywood producers for making more and more feature films in foreign countries. At least three American companies have filmed pictures there during the past several months, bringing India into sharper focus as a land of unlimited picture-making potential. This means that if the trend continues, more and more Hollywood directors of photography may expect assignments there. Both Clyde DeVinna, A.S.C., and Guy Roe, A.S.C., are presently shooting in India, and Ernest Haller, A.S.C., returned from an eight-months' assignment there the first of May.

What are the American cameraman's problems in India? In a word they are many, according to Haller, who last month wound up the Technicolor photography of "Monsoon" and "Jhansi-Ki-Rani," produced in India by The Film Group, headed by Forrest Judd. Haller was hospitalized in Bombay with pneumonia and dysentery, lost 15 pounds during his eight months' stay.

"First of all, the American cameraman going to India should be in excellent health, and be prepared to protect it during his stay there," said Haller. "Both the climate and the food are pretty rugged by American standards, and it takes a strong constitution to buck them."

"I mention health first," said Haller, "for without good health you simply cannot carry on efficiently with your assignment. If you don't feel well, you can't do your job in the hot, sultry climate that prevails the year 'round.

"Then there are the many problems relating directly to production. Chief of these are lack of good native equipment and the limited number of experienced technical help having the know-how the Hollywood cameraman has come to depend upon. Because of the beastly humid climate, it takes about four times as long to get things done as when shooting in Hollywood. The natives move slowly no matter how urgent the order. And then there are the workers' tea periods—several times a day—similar to the 'coffee breaks' of the American worker."

Although Haller's head electrician was a native with many years experience in Bombay studios, it became necessary to re-educate him in the ways of the western movie electrician. In fact, Haller had to give special training to the entire native crew which was assigned to him. On his camera crew were two well-known Indian directors of photography, each with 25 years experience in Indian motion picture studios. These men eagerly sought posts as Haller's assistants in order to learn Hollywood methods, and especially to work with a Technicolor camera—a rare opportunity for them. His immediate assistants were supplied by Technicolor's London laboratories. The sound crew also came from England. Recording was done with a magnetic tape recorder and the sound later re-recorded optically on film.

Except for the native equipment used, all else was supplied from London. No equipment was shipped from Hollywood. For lighting, Haller had twelve 170's, four 90's and one "Brute," plus some miscellaneous inkie equipment. For shooting "Monsoon," the first production, no motor generator was available for supplying lighting current. The company was obliged to tap the city's power lines. Haller burned his arc lamps in series, working off a rectifier. Thus, when one light fell off in brilliance, they all did. "Fortunately," said Haller, "by the time we were ready

(Continued on Page 260)

The greatest justification
for the fabulous faith of
ALL CINEMATOGRAPHERS
who acclaim

PLUS X NEGATIVE

is the fact that
it is manufactured by

EASTMAN
KODAK COMPANY

W. J. GERMAN, INC.
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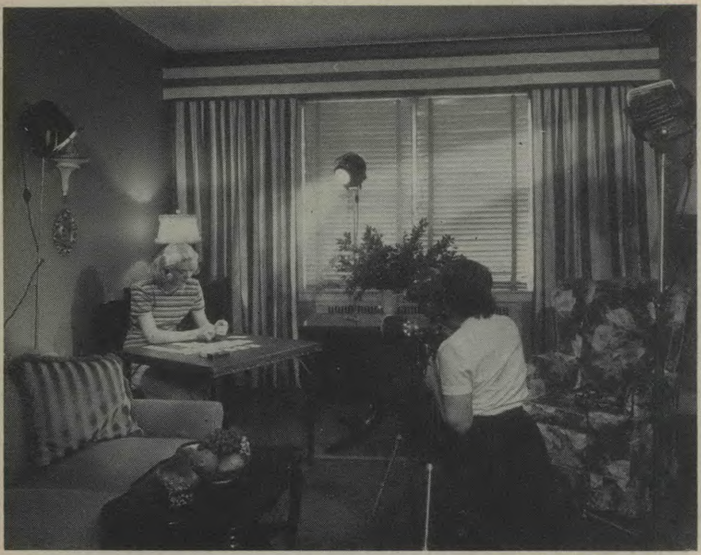


FIG. 1—SIMPLE lighting setup for a living room interior, using professional studio lighting equipment. Photofloods and photospots may be used quite satisfactorily for this type illumination.

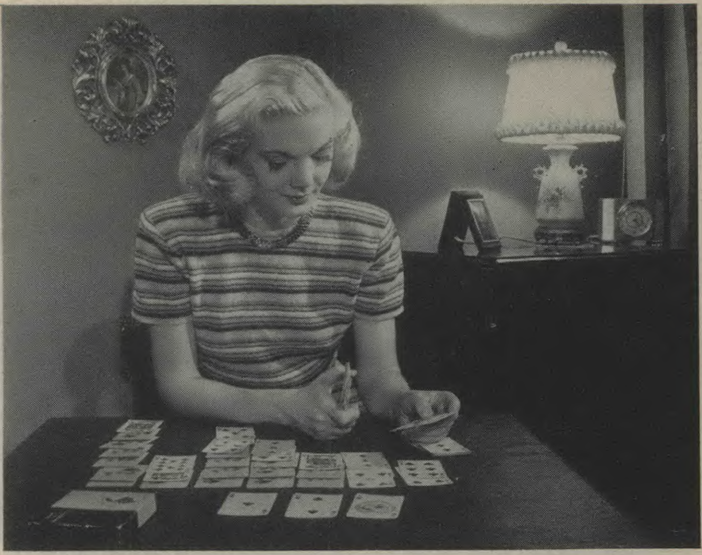


FIG. 2—NOTE HOW illumination appears to come from normal room lights—the lamp on table at right, and a light fixture overhead. Note also how lamps are placed, in photo at left, to achieve this illusion.

The Facts of Light

Some common errors in interior lighting and how the amateur movie maker can avoid them.

By LEO J. HEFFERNAN

PREVIOUS DISCUSSIONS in this series of articles on lighting have established a basic system of using four light units for filming average interiors for 8mm and 16mm movies. Readers may recall that the lights were given names—"fill," "key," etc.—depending upon the general position of the light on the set. Keeping these terms in mind as you work is the first step in the orderly procedure of lighting home interiors. However, it often happens that after everything has been done according to our established "basic system," a trained eye is likely to discover errors of one sort or another—errors that disturbe the harmonious light balance. It is these errors, and means of correcting them, that we consider now:

Briefly, the "key light" is the main front light which provides the strongest illumination on foreground objects and thereby sets the mood. This light projects shadows which must be subdued or eliminated by the "fill light" placed on that side of the camera which is away from the key light, yet close to the lens. The "back light" usually is placed high and opposite the key also, but behind the foreground subject so that it throws light upon the extreme side or top of subject, thus providing separation from the background. The "background light" illuminates the background independently of the rest of the set; the main "front lights" usually cannot do this adequately because of the added distance which must be covered.

In order to visualize all this for the reader as clearly as possible, a typical lighting setup has been photographed and is illustrated at top of page. In Figs. 1 and 2, it will be seen that the pattern of lighting followed here is for a normally lit room, and that the effect accomplished is that of making the lighting appear to come from the regular room lights, viz: overhead fixtures plus the table lamp which appears in the scene. Here we have an apparently simple lighting set-up, yet one which presents complications for the inexperienced amateur filmer unless he fully understands how to use his photo lamps. Incorrect placement of lamps will cause one or more pictorial defects which are described below, along with suggestions for the remedy of each:

Multiple shadows: When photo lamps are placed close to background walls

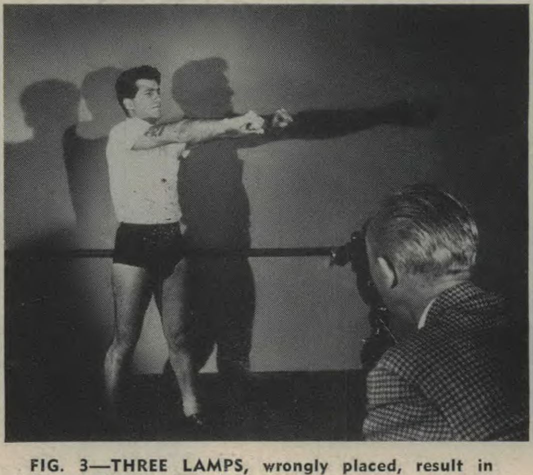


FIG. 3—THREE LAMPS, wrongly placed, result in three objectional shadows.

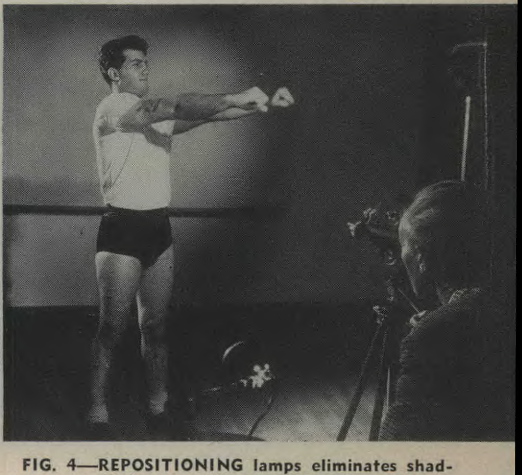


FIG. 4—REPOSITIONING lamps eliminates shadows, greatly improves the overall lighting of scene.

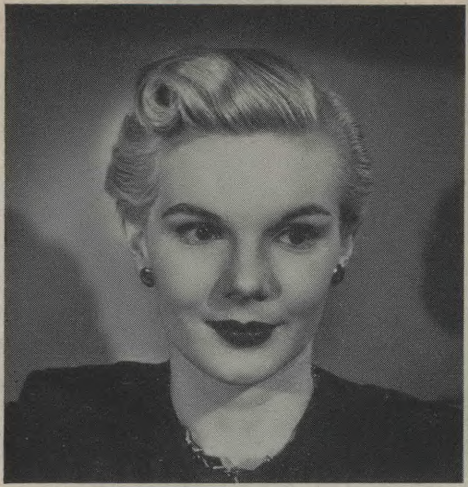


FIG. 5 — "BUTTERFLIES" — pronounced shadows on either side of the nose result from using crosslights of equal intensity.

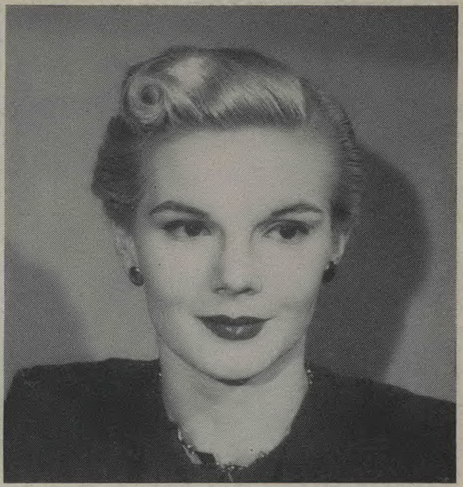


FIG. 6—FAULT may be corrected by changing light ratios to 3 or 4 to 1. The great improvement is quite obvious here.

and objects in the scene, they will cast objectionable shadows. If strong lights are used low and alongside the camera, strong shadows of the players within the scene will be cast upon the room wall or background. (Fig. 3.) If a room lamp appears in the scene, its shadow also will be cast upon the wall, destroying any attempted illusion that the scene is lit by the natural room lights. (Ordinarily, a room light will cast a highlight upon the wall.)

Such difficulties arise when foreground objects are too close to the background. By moving furniture, lamps, etc., forward — toward the camera and away from the background — shadows will then fall on the floor behind them and become unnoticeable on the screen. Your subjects may then be lighted so they will appear illuminated by room lamps instead of photo lamps outside camera range. A spotlight or floodlamp directed upon background walls or objects will introduce a pleasing highlight in the scene which might conceivably come from an overhead room fixture. Gone will be the tell-tale shadows of ill-placed photo lamps, and your players may now move about the set with reasonable freedom.

Overlit Foreground Objects: When this occurs, faces and objects in the immediate foreground are "burned out" from illumination that is out of ratio with the background. Although your front photo lamps may be correctly placed, there may be little if any light on the background. This sort of lighting often prevails when "clamp-on" lighting fixtures are used attached to chair backs, etc., with the illumination directed upon the player or subject alone, and with all the resultant strong background shadows, etc. Because of the great range between the light on foreground subjects and the background, the faces are usually unpleasantly "hot" or burned out, even when proper exposure is thought to have been established.

Such inexpert lighting is usually the trademark of amateur cine filmers who have not acquired a sufficient number of good photo lamps and reflectors. For those who are properly equipped, it is then but a simple matter to correct the errors described above. The number one step is to pour more light on the background (walls), meanwhile keeping track of the ratio by means of an exposure meter. In some instances, it may be desirable to subdue the lighting of the background by reducing it, say, by one-half as much as the light falling on subjects in the foreground.

If I appear to take a disparaging view of "clamp-on" photo lamps, it is only because I have observed they tend to induce slip-shod lighting methods. Clamp-on units, properly used, provide efficient light for indoor cine filming; but they should be attached to standards that will provide the right height for the lamp as well as a slip-proof grip so the lamp won't shift suddenly during filming.

I have seen clamp-on units used effectively when attached to chair backs, when the chairs were placed high on a table; but more dependable and efficient are the more professional-like standard floodlight and spot light units mounted on sturdy collapsible standards.

Keylight Too High: In filming interiors, first consideration should be given to lighting your *subjects*, because usually when the light is right for them, it will be pleasing throughout the scene. At least, this is the criterion by which lighting is judged. Thus, the cameraman should keep a critical eye on his subject-lighting at all times.

Here position of the key-light becomes all-important, and it is recommended that it be placed so as to provide 45° lighting, i.e., 45° to the right or left of foreground center, and at a height that will cause the light to fall on the foreground at an angle of 45°.

It should be noted that there can be no rigid rule to follow in placing any set lights, because so much depends upon position of the subject or subjects. During rehearsals the light and shade patterns on subject's face should be studied to determine whether or not shadows from the brow cause the eyes to be underlit, or the shadow from the nose crosses the line of the lips. These are serious lighting errors, as are shadows caused by the lower lip. The remedy is obvious: simply lower the key light until the change in illumination angle minimize or totally eliminates these errors.

Strong Back Lighting: The temptation to pour backlighting upon the head

(Continued on Page 266)

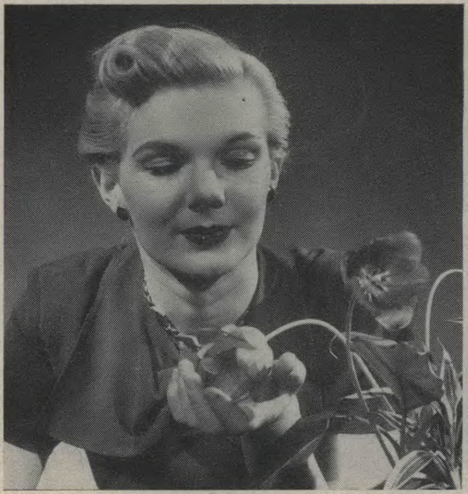


FIG. 7—WHEN BACKLIGHT spills over onto subject's face, the above shadow effect results. Also, light at left is too high.

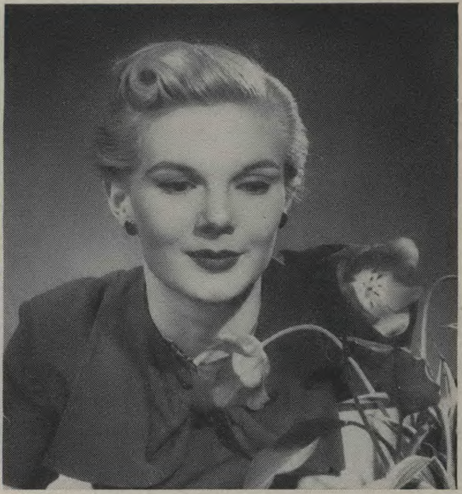
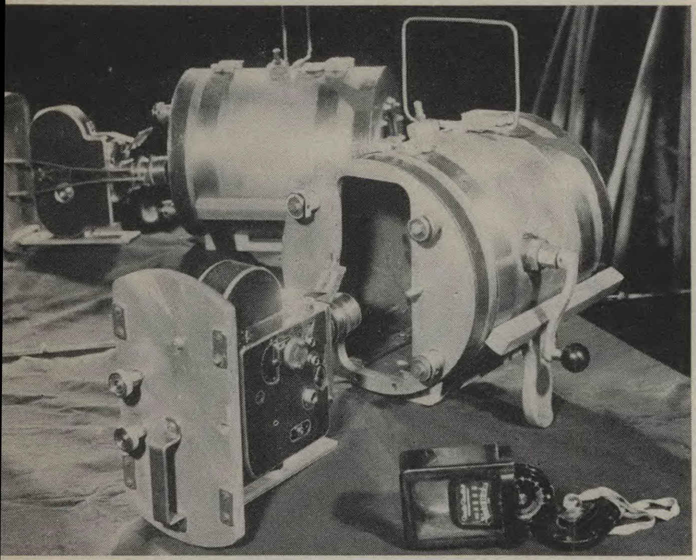


FIG. 8—FAULT MAY be corrected by moving the backlight more to rear of subject and centering the fill light.

Camera Undersea

'Spear That Fish!' — 1952 Top Ten Award winner, was photographed with a 16mm Bolex in a homemade underwater camera blimp.

By LEON PADDOCK



WATERTIGHT camera blimp and case for exposure meter were constructed by author. Barrel design of blimp minimizes effect of surging water, makes for steadier handling below surface.

THE AUTHOR with 4-foot octopus used in climactic scenes for his prize-winning 16mm color film, "Spear That Fish!"

IN BARREN desert of Sonora, Mexico, author reclines under crude shelter and writes his script. Here the desert reaches to very edge of the Gulf of California.

LEON PADDOCK wasn't satisfied just to dive beneath tropical waters to study marine life; he wanted others to see the odd and colorful underwater creatures and the drama of their little-known activities deep in the Pacific off the West Coast of Mexico. So he took his cine camera with him on his diving jaunts and photographed in 16mm Kodachrome some highly dramatic footage, which later became "Spear That Fish!" — acclaimed one of the Top Ten pictures in American Cinematographer's 1952 Motion Picture Competition. Here Mr. Paddock describes his hobby of "skin-diving" and tells how he filmed his remarkable picture.—EDITOR.

. . . . . .

"HEY — YOU WANT TO GO SKIN-DIVING? Come on! Use these fins and this mask and let's go . . . I'll shoot some movies of you around those rocks over there . . . it's OK, there are no dangerous monsters there . . . no, no octopus, no sharks . . . just a wonderful marine garden with all its lovely colors and growing things, and the strange, tiny creatures and the curious fish that never have seen a human before."

. . . so, we don our gear and prepare to slip into the water, into a new adventure. My new-found friend will find, as we go beneath the sea, a gorgeous, completely captivating world, and I will find new variations in the color, the life, the mystery and quietness, and in the lure of the undersea world that I have come to love.

Skin-diving as a sport is catching on by leaps and bounds, and other skin-divers also are working on underwater camera equipment, because they, too, have been captured in a web of wonder, and want to record on movie film some of the fascination of the shallow-water world. This, then, is what I tried to show in my picture, "Spear That Fish!" — a new, thrilling sport in a fascinating, colorful wonder-world where the thrill of discovery and danger is everywhere; to show a man swimming, learning to observe, to control his body and breathing, to go with the sea and use it for his purpose — not to be afraid of it and battle against it and become worn out, and perhaps even be claimed by it. I sought to show the exertion and the power of the skin-diver as he cruises along the very bottom of the sea in a lovely garden where fishes hide in the dark recesses of the rocks; to show the marine life there — the lobsters, eels, rays and other things a little more fearsome; and to show the fantastic coral with its unbelievable color patterns, and the plankton, the worms and the snails. Life is more abundant in the sea than anywhere on land.

Getting such underwater scenes on color film became my chief ambition from the first day I tried skin-diving. But first there were many tests and trials to be made with breathers, regulators, and air bottles. A specially designed underwater camera blimp, or "box" as we call it, was built for my 16mm Bolex. Such design factors as perfect water displacement and parallax correction were considered in its construction, as also were such important features as geared iris and focus controls externally operated, mirrors to facilitate

(Continued on Page 262)

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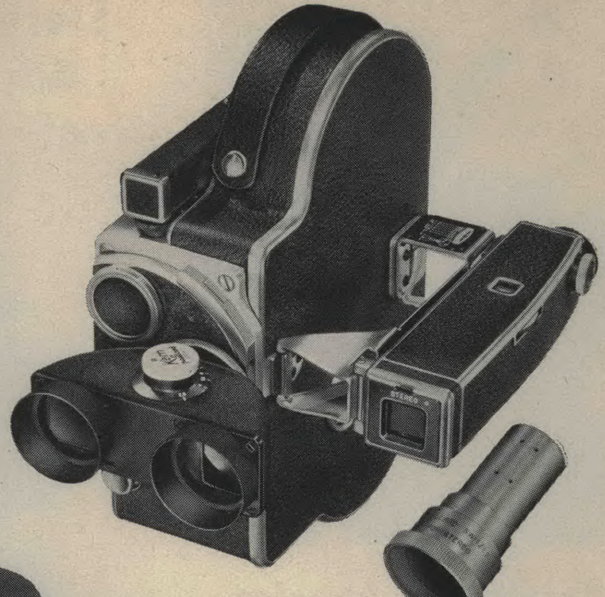

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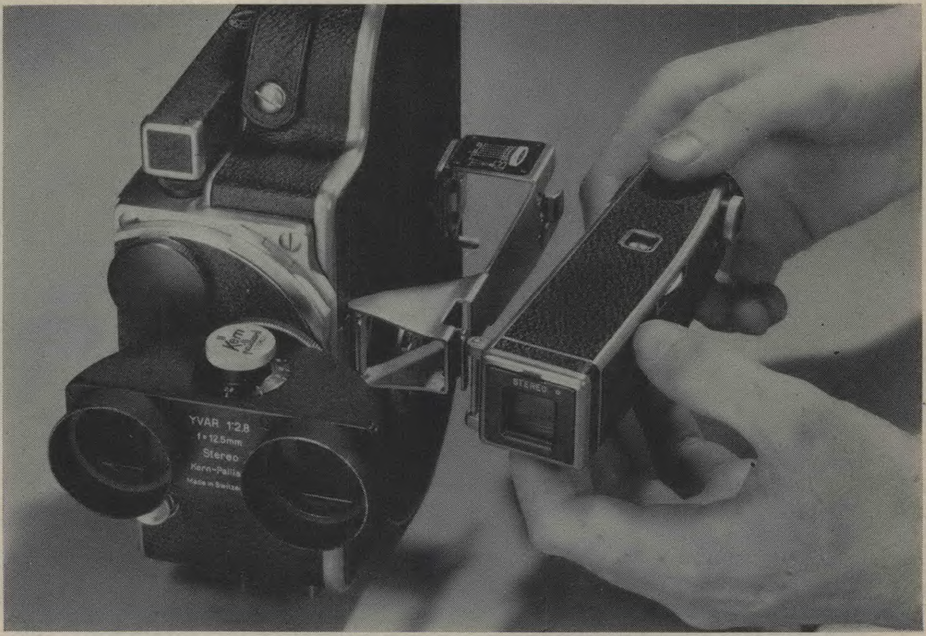


TO MAKE three-dimensional sound movies, the first step is to equip the Bolex H-16 camera with the new Kern-Paillard stereo lens and viewfinder. Single-perforated sound film should be used in the camera.

HOME MOVIE MAKERS can out-Hollywood Hollywood by adding sound, color and three dimensions to their family movies, according to Paillard, Swiss movie camera manufacturers.

Using Kern-Paillard Stereo lenses, which give a three-dimensional picture by the Polaroid system of splitting light two ways to give a three-way illusion, the amateur can add a thrd dimension to his home movies.

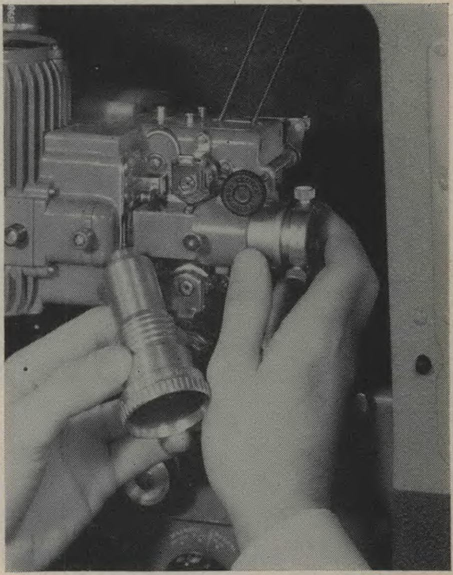
When the Stereo projector lens is used with Bell & Howell Company's new Filmosound 202 16mm magnetic recording projector, three dimensional color movies with a magnetic sound track can be produced at home.

Although three dimensional silent movies are not new (they were first exhibited at the New York World's Fair in 1939), experts describe this new method as the first practical system of making Stereo sound movies for the amateur.

At present the Kern-Paillard Stereo taking lenses are being manufactured only for the Bolex 16mm camera. Using single perforated (sound) film in black and white or color, the photographer who wants to make sound, three dimensional movies uses the Bolex camera equipped with a Stereo lens.

After having his movies processed, the next step is to edit the film and send it to Bell & Howell Company to have a magnetic "Soundstripe" added to the edge. The film is then ready for recording the sound track on the Filmosound 202 magnetic recording projector.

Recording is done by speaking into the microphone as the picture is projected on the screen. Voice and musical background may be added at the same time, and the track may be erased and re-recorded as often as desired. There is



AFTER the film has been processed, edited and "Soundstriped," recording is done on a Bell & Howell 16mm recording projector. When a stereo lens is used on the projector the sound film appears in three-dimensions on the screen when viewed through Polaroid spectacles.

a special interlock system to prevent accidental erasure. As soon as the sound track has been recorded, it is ready for immediate playback.

It is only necessary to place a Kern-Paillard Stereo projection lens on the Filmosound 202 to project three-dimensional, sound movies. Polaroid glasses are used to view the pictures.

The Bolex Stereo system of taking and projecting lenses, including special screen and accessories, retail at $397.50; the Bolex Stereo equipment, complete with 16mm camera, for $715.50. The projection lenses may be adapted to any movie projector.

BULLETIN BOARD

(Continued from Page 238)

Festival in Cannes, France; also motion picture director Henry King.

King paid great tribute to the industry's directors of photography, citing their contributions from the very earliest days of Hollywood's motion picture history. Said King: "The cameramen no longer are merely the cornerstone of this industry — they are the whole foundation."

Adding a chic feminine touch to the gathering were two of Hollywood's most promising movie starlets—Cleo Moore and Marie Windsor. Both the local and national motion picture press were also represented, with most of the leading writers and reporters on hand to report on the affair.

•

MARCEL ANDRE LePICARD, pioneer Hollywood director of photography, died May 25th at the age of 65. Born in France, LePicard began his career as a Hollywood cameraman in 1913. He photographed such old-time favorites as Dorothy and Lillian Gish, Wally Reid, Milton Sills and at one time photographed all pictures in which Will Rogers starred. Later he was Madge Kennedy's favorite cameraman. During the past several years he was associated with Monogram Pictures as one of that studio's top directors of photography. He became a member of the A.S.C. in August, 1935.

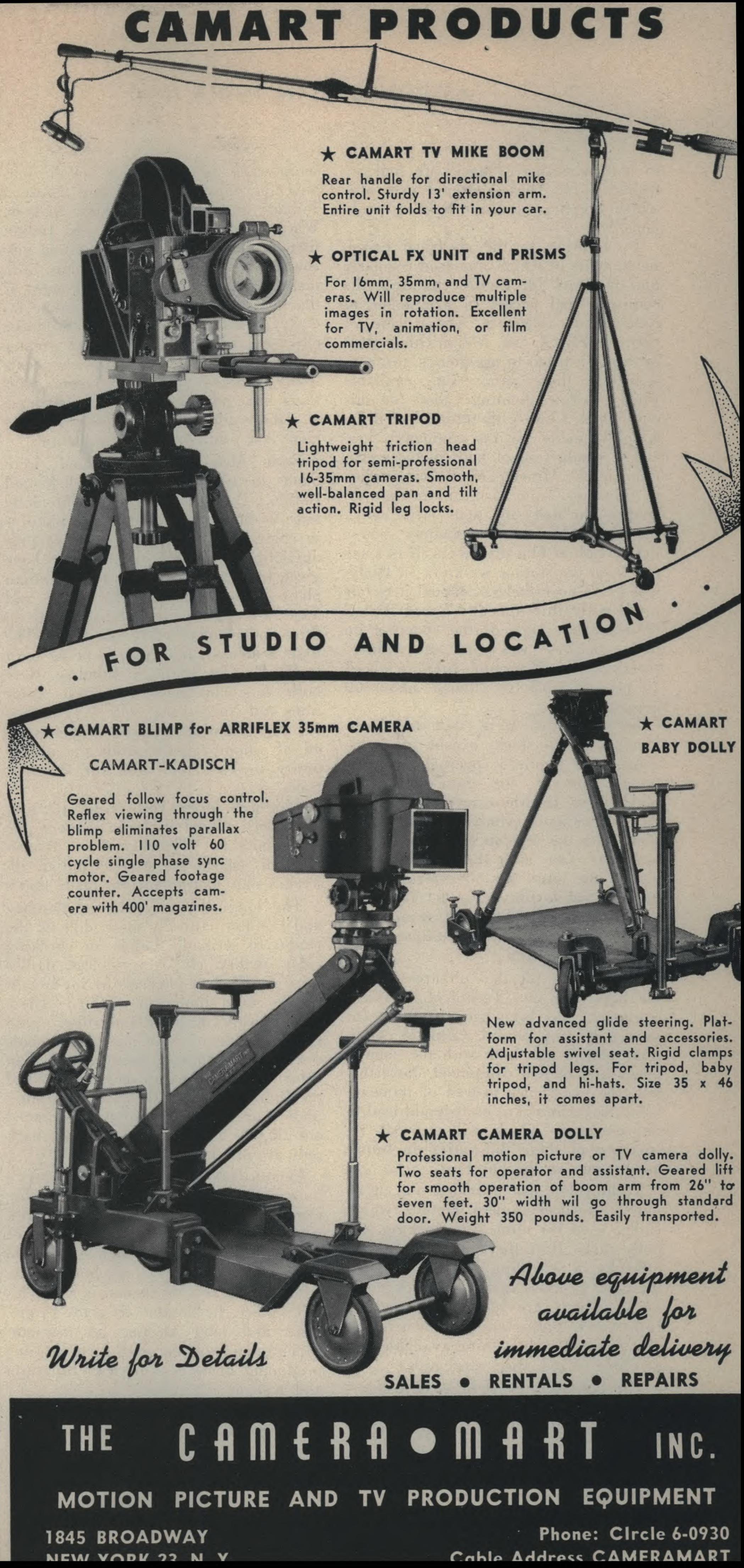
Surviving him are his widow, Ethel, and a daughter.

•

JOHN W. BOYLE, A.S.C., AND HAL MOHR, A.S.C., were re-elected last month to represent the cinematographers on the Board of Governors of the Academy of Motion Pictures Art and Sciences. Charles Brackett was unanimously re-elected president of the Academy.

•

KOHJE SUJIYAMA, Japanese cameraman, won the only photography award at the 1952 Film Festival at Cannes last month, for "Tale Of Gengi."



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ASSIGNMENT IN INDIA

(Continued from Page 252)

to start shooting 'Jhansi,' we had acquired a big Diesel-powered generator which greatly eased our lighting problems."

In addition to the electrical equipment, some of which was used regularly out of doors for booster lighting, the company had access to a number of native-made reflectors. These were of poor quality. As yet, Indian cameramen have not learned to use gauzes and consequently there were none available when exterior shooting called for this equipment. Gauzes, therefore, had to be specially made for the company's use.

The production of both pictures centered in the Minerva Movietone studios in Bombay — one of the more than 20 studios located in that city alone. 'Although Minerva adequately serves native Indian film producers, it is a far cry from the studios we know in Hollywood; we nevertheless adapted it to our needs with little difficulty," said Haller. "Fortunately, most of the shooting on both pictures was out of doors—exteriors for 'Monsoon' running about 40 percent, and for 'Jhansi' about 60 percent."

Both pictures were shot on Technicolor 3-strip stock, except for some scenes that required coverage by additional cameras. In these instances, Mitchell or DeBrie cameras were employed, using Technicolor Monopack film. With the regular Technicolor film, both the fast and slow stocks were used — the latter for all exteriors, and the fast stock for interiors. This was shot at 200-CP level at f/2, using inkie beam-splitters and arc technique development for the film.

Production of the pictures marks the first time that Technicolor camera equipment has been used in India for such a lengthy period. Climatic conditions played hob both with the camera lenses and optical equipment. Nevertheless, the experience proved of immense value to Technicolor, and should lead to improvements which will prevent recurrence of these difficulties on future assignments in the Far East.

Technicolor also provided one of its mobile 4-wheel camera mounts which Haller used for numerous tracking and dolly shots. Here the company ran into difficulty in providing smooth tracks for the dolly to move upon. The slick dural tracks which are commonly used in Hollywood studios are unknown in India, so the next best thing available was a couple of old, rusty steel rails.

The two pictures were a joint enterprise between Hollywood and Indian producers. So well did the production setup work out that it has set the pattern for future collaboration between Indian and American film makers. Whereas only a few years ago Indian film producers shied away from any cooperative deals with foreign film makers, fearing the encroachment of the foreigner into the Indian movie industry, the intelligent Indian producer now sees increased profit and greater opportunity for him in two-way deals with American film producers with know-how, adequate finances, and above all—the equipment so necessary to efficient and profitable film production.

Both "Monsoon" and "Jhansi" were made in two versions — English and Indian. Thus the Indians, who long have wished to be able to make pictures in color, now have their first two productions in Technicolor. These have given tremendous impetus to the Indian plans for producing color films and have resulted in construction starting on three independent color labs there. The first, nearing completion, is being built at the Central Studio in Bombay. Here both Eastman negative-positive color films and Ansco Color will be processed for local motion picture companies—all of whom eagerly await the opportunity to use color film for the first time.

Although other Technicolor pictures have been filmed in India—among the more notable, "The River" — "Jhansi-Ki-Rani" marks the first all-Indian all-Technicolor motion picture made there.

The long distance between Bombay and London naturally made difficult the matter of securing dailies for checking color quality, etc. Nevertheless, dailies were supplied at intervals by air-freight on the most important action. "These were mostly in black-and-white," said Haller, "with prints of one or two shots out of each sequence being supplied in color." Such economy measures baffled the Indian custom officials who couldn't understand why the company shipped out 20,000 feet of film and got back only around 5,000 feet.

Ernest Haller, one of the industry's outstanding directors of photography, won an Academy award for his work on "Gone With the Wind." A native of Los Angeles, Haller attended school there and his hobby was photography. After a spell as a draftsman in an architect's office, he became an actor in pictures and later became an assistant cameraman, working with such old-time producing firms as American Biograph and Kalem.

Advancing to a full-fledged cameraman, Haller photographed many silent pictures, including such famed serials as "Hazards of Helen" and "Stingaree." Then, in the sound era, he filmed many of Hollywood's most important productions, including pictures for Warner Bros., where he was under term contract from 1925 to 1951, when he decided to free-lance. His credits include: "Princess O'Rourke," "Mr. Skeffington," "Doughgirls," "Humoresque," "Deception," "The Verdict," "Unfaithful," "Winter Meeting," "My Girl Tiss," "Mildred Pierce," "Chain Lightning," "Dallas," "Always Keep Them Laughing," "Saratoga Trunk," "Jezebel," "Moonlight Bay" and "Jim Thorpe—All American."

Haller is credited with developing background projection, one of the industry's greatest technical achievements. In 1920, he photographed "The Shepherd King" and "Nero" in Italy and while on location in Trans-Jordan with the former production, became a friend of King Abdullah, who recently was assassinated.

Haller's return to Hollywood will in all probability be brief. He is scheduled to go to London to assist in the editing of "Jhansi." After that, he plans to return to India to photograph another feature picture—in Technicolor, of course.

ENGINEERED PHOTOGRAPHY

(Continued from Page 247)

films, is shown in the photo at top of page 246, which is a scene in the initial film in the series. Here Victory Jory and Norma Eberhardt read their lines while standing immediately behind important foreground props. These visually suggest the locale of the action, which is the back room of an early-day western telegraph office where a band of counterfeiter's have set up their equipment. This sort of composition probably would be frowned upon by makers of feature films, but for television it is most ideal, if not essential. Television film stories are more compressed than those for theatre films—thus the need for compression of action, dialogue and visual orientation.

In television films, orientation may be enhanced through an illusion of three-dimension created in the photography of each scene by use of the proper lens for each take, skillful lighting, and the most advantageous camera angle.

The photography of each film in the "Frontier Detectives" series is carefully planned and executed, following the theory of Dr. Lutes, and usually under his personal guidance. This new theory application does not begin at the camera but at the time of writing the script, when the impact of certain camera

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and viewpoint that certain lenses afford, are all carefully considered and the correct procedure outlined in the script as a guide to the cameraman.

Dr. Lutes, through long experience both as photographer and optical engineer, knows without referring to handbook charts the angle covered by a given lens as well as the perspective it will render. Thus it is possible for him to pre-plan the camera setup for each scene on the basis of what lenses of different focal lengths can do to give a scene the maximum pictorial and dramatic impact, and at the same time retain its relationship with preceding scenes and those that follow.

When the company goes on the set, much of the camera work has been pre-engineered in cooperation with the cameraman. This pre-planning takes nothing away from the latter and does not lessen his responsibilities in any way. What it does is put into the cameraman's hands a definite shooting plan which allows him to give greater attention to pictorial lighting and photographic direction. The result is that photography is greatly speeded up and a larger number of takes are completed within a shooting day with greater cooperation between crew, director and producer.

Roscoe E. Thomas, co-producer of the series, also is the scriptwriter, and has

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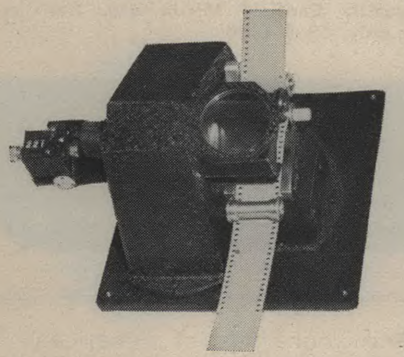

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INQUIRIES INVITED

worked closely with Dr. Lutes for many months in order to integrate these principles of proper visual presentation into his scripts. This has not only resulted in a considerable saving of production time, but has enabled Thomas to incorporate many new special effects which will be used more and more to expand this new technique of movie making for television.

In his extensive work with stereo photography, Dr. Lutes has found that a measure of three-dimension illusion can be introduced in motion picture photography without the aid of dual cameras, twin lenses or use of Polaroid viewing spectacles, by discreet use of known techniques of photography.

According to Dr. Lutes, every TV film should have strong orientation clues induced by proper sequential arrangement of shots, camera angles, lens control or perspective and depth, etc. He believes that the choice of lens to be used for a given shot should be made on the basis of its ability to enhance perspective and viewpoint, rather than to render a larger or smaller image on the screen. He further holds that it is vitally important to keep to a minimum all camera movement, such as panning, dollying, etc., except where it enhances the depth effect, in order to avoid sudden visual shock that tends to disorient the viewer's perception.

This new aspect of photography for video films, says Dr. Lutes, can greatly increase the satisfaction which the viewer gets from TV films on his home receiver. If good photography, carefully planned and executed, tends to make a TV film more enjoyable, the popularity of that program increases and so does its Nielsen rating. And that's what sponsors want.

In addition to the above developments, the matter of contrast in both the negative and print is carefully considered and controlled in all stages of production from lighting and photography to processing of the films.

Title techniques also are being studied for improvement of lettering style and size, text line length, and the contrast relationship with the backgrounds—all aimed at making TV titles more readable on all types of receivers.

The company's program has a long-range plan with many novel approaches, which will offer greater possibilities for cameramen to better express their abilities in the medium of TV film production.

CAMERA UNDERSEA

(Continued from Page 256)

observation of lens settings and footage dials through the front lens port, extension for the camera motor winding key permitting winding from outside the blimp, and staggared pistol grips with a trigger to start the camera running.

Picture me, then, sitting on the ocean floor in twenty-five feet of water, an Aqua-Lung on my back to supply air, winding the camera and shooting footage of the curious fish as they swim up close to me to investigate what manner of strange new monster had invaded their domain!

With this filming equipment there are no trailing lines, and no cumbersome diving hat. The camera blimp is completely versatile and mobile, easily guided in the water, and may be taken into crevices, caves, through the sea grass and kelp beds, etc., when photographing a diver in action.

Earlier I had built another camera blimp which lacked many of the features of its successor. It was made of plastic and incorporated all the necessary factors. It was used mainly for our initial color and focusing tests, when its deficiencies became apparent. Because its surfaces were flat, excessive movement was created by the force of the surging water acting on its plane surfaces. For this reason, the contour of the second blimp was made more or less round, allowing water to flow smoothly around it without creating any appreciable motion. This is important when making dolly shots under water, when a steady camera is necessary. When working in very shallow water, some movement is still unavoidable. For this reason, most action scenes and individual fish shots are photographed at depths of from 15 to 25 feet, using a non-cruising camera.

Cruising scenes of the tiny creatures in colorful areas, and follow shots of the exploring divers are done in depths of from 6 to 10 feet. We found that a certain amount of movement adds to the realism and impact, and helps sustain interest; by virtue of being imperfect, the effect of spontaneous action is greater.

The staggared pistol-grip handles afford easy balance and control of the camera blimp. A water-tight plastic box to contain the Weston meter, and a cork float on a 12-foot cadmium-plated chain completes the outfit. The latter item is attached to the camera blimp so that when scenes are staged in a chosen area, it is unnecessary to bring the camera to the surface each time I swim up to give directions. Instead, it can be left on the ocean floor where it is being used, and the float riding on the surface shows where the camera is located.

The value of such a gadget was brought sharply to our attention following an experience we had when we attempted to stage a special scene under water. We had located an old anchor on the ocean floor, covered with Alcyonarian coral. We contrived a scene of a diver discovering the anchor and then finding a pearl bed nearby. I set the camera on the floor in plain sight, and then proceeded to decorate the "set" with pearl oysters. Up, down, back to the boat, back down to the bottom again we went. Soon the water was so churned up there was a virtual cloud of "dust" kicked up which spread quickly through the water, obscuring the camera from view. In an effort to locate it, it was necessary to spend a lot of valuable time and to use much of my precious air supply in covering the area foot by foot. Eventually, of course, the camera was found. Now that we have the chain and float, we no longer encounter this trouble.

The scene of our filming was the off-shore waters of Morro Colorado in Sonora, Mexico. Our party traveled there from Los Angeles in a war surplus panel truck, which had been equipped with a welding outfit for making repairs, a grinding wheel for sharpening our fishing spears, a Servel refrigerator which operated on Butane gas, a 14-foot plastic boat, and an outboard motor. Among other important items of equipment were eleven bottles of compressed air for use with the Aqua-Lung. This later proved barely enough for shooting 2500 feet of underwater scenes.

The color to be found beneath the sea is the lure which beckons so many to the wonderful adventure of skin-diving. Hunting for abalone, spearing fish, and catching lobsters by hand all are part of the early experience and training, and a thrilling way to get exercise and at the same time bring meat to the table. But the real lovliness of the marine gardens and the wonderful feeling of becoming master of your body in the water comes with learning to cruise about beneath the sea in an element completely alien—to swim there like the fish and to see the abundance of living things that apparently have forgotten about evolution; to cruise past the glowing jewels of phosphorus and the multi-colored plants and coral.

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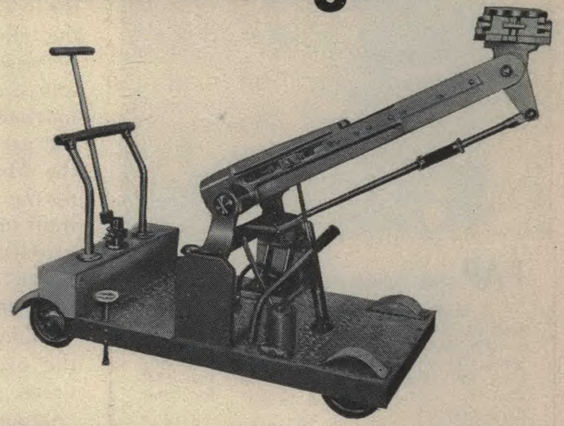

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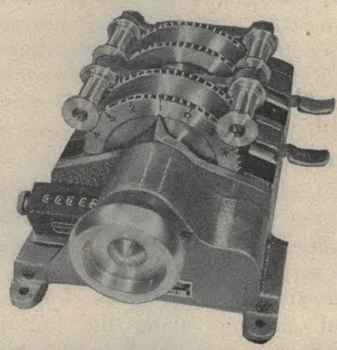

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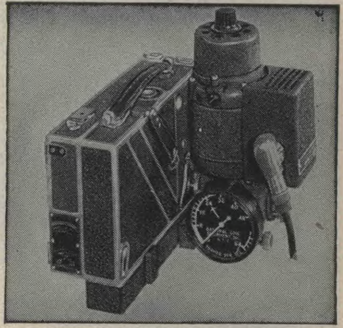

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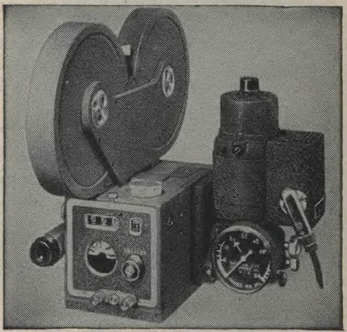

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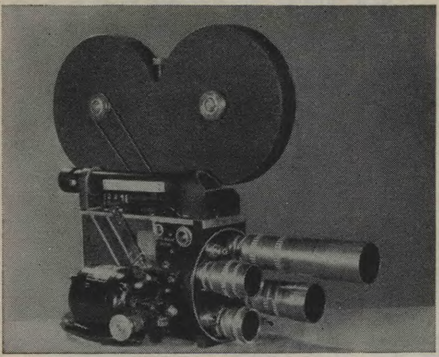

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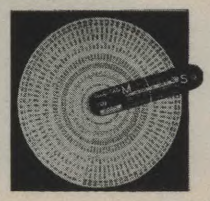

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marine gardens was breath-taking, and we made it the outstanding feature of our film. Trying to capture this color with fidelity, and the exposure problems created by the slower speed of Kodachrome film proved two of the toughest technical obstacles. The terrific red absorption of salt water demanded the use of filters which further reduced the effective speed of the film. It was because the water at Morro Colorado is unusually clear and the atmosphere remarkably free of haze that we travelled the great distance to this spot, which is the Mecca of the hardiest of the skin-diving fraternity. Here strong, brilliant light penetrates the water to great depth, providing sufficient light at 25 feet to permit exposures at f/2 on Kodachrome at sound speed.

When cruising with the camera along the ocean floor in predominantly dark areas, it was sometimes necessary to change the lens aperture to f/1.5. Similarly, when passing from dark areas into one where a great deal of white coral prevailed, or when coming up toward the surface, it was necessary to reduce the aperture to anywhere from f/3.5 to f/8. Red absorption varies with different depths and requires use of different correction filters having different values.

Magnification of objects in sea water is three to one, requiring a whole new standard of focusing. This magnification is apparent to the eye, and causes some startling effects as, for instance, when cruising along the bottom and rounding a rock, the face of a giant sea spider is seen.

A general rule for focusing a camera lens under water is to subtract one-third of the actual distance. After some practice, the distance can be judged fairly accurately. I misjudged distance when shooting the scene of the leg-power strokes of the diver, in which only the diver's legs and swim fins appear. The diver started broadside and went straight on ahead, with the camera following in his wake. The combination of bad focus, air bubbles and near-surface light made those bubbles flowing past the camera dance and sparkle eerily. My error in judgment, in this case, actually resulted in an impressive scene.

The gulf waters are considered a paradise both for skin-divers and undersea movie makers. Here there is an abundance of every kind of sea denizen: lobsters, rock scollops, sunburst starfish, and sea slugs. We speared mulatto, cabrilla, grouper, and captured octopus and a giant green turtle—all of which was recorded with the movie camera. The octopus is a good actor, and furnished a great deal of drama for our movies. It hates humans, always runs away, and squirts an inky fluid or changes color in order to conceal itself from its enemies. The big gulf groupers hide in the dark caverns where there rarely is enough light for photography.

The rugged lava crevices and the potholes eroded by the ceaseless motion of the water through eons of time; the colorful marine gardens and semi-tropical fish; the lure of adventure culminating in diving into a strange new cove; and then the quiet satisfaction of nights under the stars in a remote place — all this made the adventure worthwhile.

The doing of the job and the pleasure of accomplishment were the driving factors. The film we have as a permanent record of these adventures is our big reward.

CONE LIGHTS

(Continued from Page 248)

shooting. In other words, our aim was to simplify set lighting, especially for low-budget productions, so that all the equipment needed on the floor during shooting would be two additional lamps and the camera."

The cone lights are not converted incandescents but are entirely new units manufactured on the Columbia lot. As may be seen in the accompanying photos, general construction consists of a cone-shaped reflector having a wide rim or band at the front. At the rear of the cone are two vertical rows of ventilator holes. A ventilated sheet metal baffle mounted over the rows of holes intercepts leak light.

The Columbia cone lights are being turned out in three sizes: 24-inch diameter with a 2-K globe; 36-inch, with a 5-K globe; and a giant 60-inch unit which takes either one 10-K globe or two fives. Total units now in use number forty-eight 5-K's, twenty-four 2-K's, and six of the 60-inch giants. Soon to go into production are a number of 750-watt cone lights for use in medium and closeup shots.

The 2-, 5-, and 10-K globes are mounted base down in the lights, well forward of the conical reflector and behind a corrugated circular baffle plate that entirely shields the globe from the front. In mounting the globes, they are turned 90° so the filament faces the sides of the lamphouse instead of front and back, as with other studio lights. It was found that light output of the cone lights was increased considerable following this method of mounting the globes, due to the increased radiation of light resulting from the greater area of the deep conical reflector surface. Maximum reflectivity is obtained by finishing the lamphouse interior with a special flat white paint, selected for its ability to withstand the heat of prolonged lamp use without discoloring or blistering.

Columbia is now using the cone lights on all its productions. The lights have readily been accepted by the studio's directors of photography, although not all use them in the same manner. Although the cone lights may be used both overhead and on the floor, each cinematographer has adapted them to his own peculiar style of photography. For low-budget "B" productions, five or six cone lights are used overhead on the average set, with perhaps two more on the floor. Studio cameramen have used the lights with marked success in shooting night interiors and as booster lights for exterior day shots. In short, the new light meets just about every set lighting need except for effects lighting, sharply defined shadows, highlighting, etc.

The cone lights have proved ideal for lighting exterior sets built indoors on the sound stage. They produce illumination approximating daylight—a shadowless light that virtually bends around trees and shrubs, etc., imparting a most natural aspect of daytime. So great is the quality of diffusion, Stebbins said, that a person can walk in front of a cone light without casting any appreciable shadow on the set.

Although development of the cone light at Columbia was essentially an economy move, the units later proved the most ideal light source for the vast sets used in "The 5000 Fingers of Dr. T.", which Frank Planer, A.S.C., recently photographed in Technicolor for Stanley Kramer at Columbia.

Planer was attracted by the lights while casually watching another picture being filmed on a Columbia sound stage. He investigated them, studied footage shot with the lights, and decided he wanted cone lights for illuminating all sets for "5000 Fingers." The studio gave him every available unit for this production—the studio's most lavish for 1952, incidentally.

The manner in which some of the cone lights were used on the giant piano keyboard set is shown in the lower photo on page 248. Here the lights may be seen used in clusters overhead and also on the floor in combination with other conventional set lighting units. This set, incidentally, occupied the entire floor area of two adjoining sound stages, and required every available cone light for illumination.

(Continued on next page)

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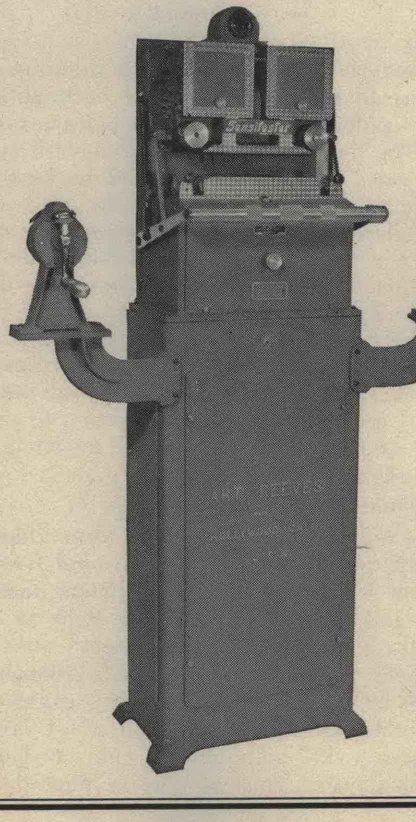

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"In using cone lights on sets for '5000 Fingers'," said co-developer Larry Butler, "Frank Planer advanced our set lighting program at least a year. It was the first time the lights ever were used for Technicolor photography and the first time they were used on really large sets." It was the encouraging use given the lights by Planer which led the studio to build the large 60-inch units, Butler said.

As may be seen in the photo previously referred to, use of cone lights makes it possible to keep the floor before the set relatively free of cables, gobos, etc. Actually, the need for gobos, diffusers, etc., is all but eliminated.

Columbia engineers are encouraging other Hollywood studios to adopt cone lights, believing they eventually will develop into the most important industry-wide set lighting equipment. The continuing trend among Hollywood studios for greater production economy, it was pointed out, inevitably will speed up use of reflected lighting throughout the industry. Both Stebbins and Butler said that whenever it is used, the number of set lighting units can be materially decreased with resulting substantial savings in both crew and rigging costs.

"The savings made on one production alone here at Columbia," said Stebbins, "more than paid for the manufacturing costs of all cone lights we have made to date."

THE FACTS OF LIGHT

(Continued from Page 255)

and shoulders of an actor in order to create an "arty" effect of backlighting is a dominant fault of the lighting tyro. Rim lighting that is too strong will only prove distracting. It should be kept in mind that the real purpose of backlighting is to provide separation between subjects and establish different "planes" in the scene. Through its discreet use, foreground players and objects are made to stand out from the background — giving the scene dimension and depth. It is therefore advisable to use just enough backlighting to provide pleasing roundness and modeling— judging the quality with a practiced eye while all set lamps are lit.

Lights Too Close: The term "harsh lighting" often is tossed around freely, but few, if any, amateur filmers understand what exactly causes light to be harsh. A so-called point light — i.e., a light source having small diameter beam — will produce a hard, contrasty light whereas a light source of large area will highlight a subject more pleasantly. That is why a photoflood bulb in a large dishpan-type reflector will render the best quality illumination for the key.

There is another factor that must be taken into consideration, too. When set lights are very close to the subject, illumination falls away very sharply. Subjects close to the lights will be brightly lit, while objects farther away will receive only a fraction of the illumination. In other words, the depth of field of the required light strength is quite shallow when used close, creating harsh lighting. There is a great improvement in the relative depth of field of the required light strength, when lights are placed farther away.

Now, this simply means that either the lights must be sufficiently powerful to permit using them at a comfortable distance, or a lens of greater light-gathering power must be used on the camera, permitting use of a wider stop for the decreased illumination that follows placing the available lights farther away. The cameraman must continually strike a balance between the illumination level and the lighting effect.

Unwanted Shadows and Highlights in Cross-lighting: It is difficult to imagine any lighting set-up for motion pictures that did not incorporate cross-lighting of some sort. Cross-lighting is accomplished by providing 45° lighting at each side of the camera, without fill light, as in typical lighting set-ups used by child portraitists. In shooting movies, the key light and the fill light — each being set up on opposite sides of the camera — can, when properly set, produce pleasing cross-lighting. Cross-lighting gives dimension to the scene, providing a measure of separation.

After the basic lights have been "roughed in" — that is, set up in their probably positions — the cameraman should study the faces of his subjects to make certain there are no "butterflies." These are dual shadows which appear on the face when the lights at either side of the player are of the same intensity. The effect is illustrated in Fig. 5 and shown corrected in Fig. 6. Correction of this fault may be achieved by changing the lighting ratio to, say, 3 or 4 to 1. However, there are several other ways of eliminating the fault, also. The key light may be intensified, or the fill light subdued; or the fill light can be placed closer to the camera. Whatever the remedy, the one to choose is that which renders the best result visually.

Another problem which frequently presents itself is when some of the backlight spills over onto the player's face. Here much depends upon the contours of the face, for often such lighting will enhance rather than detract from the pictorial effect, as illustrated in Figs. 7 and 8. A thin face or a small nose may be embellished by marginal highlights; but in most cases light spilling over onto the face is undesirable if concentrated. For relief, the light should be placed farther back or turned to one side so that only the edge light is used. Further correction may be obtained by having subject move his or her head to the right or to the left until the right effect is obtained.

Lighting Unsuited To The Scene: The gravest error which a light-happy cine filmer can commit is to shoot a scene calling for special effect lighting without regard for the special requirements of the script.

Much careful planning is required to work out suitable effect lighting for such scenes as a group of people before an open fireplace, of a mother singing a child to sleep in a dimly lit room, or perhaps of hubby sneaking in late at night, shoes in hand, or a burglar prowling about in a darkened room, flashlight in hand. Some cine amateurs steer clear of lighting effects that tax their ingenuity; still, some wonderful results have been accomplished by amateurs in shooting scenes such as these, proving that amateurs can accomplish such professional effects if certain factors are kept in mind.

Practically all special effect lighting setups are predicated upon the assumption that there is one single strong light source which illuminates the scene—the flames in the fireplace, the moonlight coming through the window, the burglar's flashlight, etc. For this reason the establishing long shot should include strong evidence of this light source in the scene. Placement of set lights will be dictated by the known direction from which the respective light source shines. Obviously, the highlights will be strongly directional, and all important objects within the scene should be rimmed with sidelighting by special photolamps placed for this purpose. The remainder of the picture area should be left dark, for that is how the effect lighting gets its impact — by contrast. And yet, essential details and movements of the subjects must be clearly discernible, for which a certain amount of fill light will be needed.

These, then, represent the lighting situations that will confront the serious filmer most frequently. In each case we have outlined the procedure to follow to obtain the most professional-like results. It should be remembered, however, that only through *experience* and exhaustive study will the amateur learn lighting techniques and how to cope with lighting problems that continually arise. It is hoped the foregoing may prove a helpful reference guide as well as a basis on which the reader may begin really serious work in lighting interiors. END

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CAMERA HEATER

(Continued from Page 250)

director of photography, anticipating the cameraman's difficulties, had made tests with camera equipment in the snow-covered mountains not far from Hollywood. "The only practical approach to the problem," he said, "was to put the heating device inside the camera close to that part of the mechanism most readily affected by low temperatures."

Back at his studio workshop, Arnold designed just such a device, installed a prototype in a Mitchell BNC camera, and made tests during a snowstorm near Mount Wilson. The heater worked perfectly. The heater and the method of installation in Mitchell cameras are illustrated in photo at bottom of the page.

"The trouble with all the old methods of camera heating," said Arnold, "is that the heat failed to reach the vital parts of the camera—the shafts which turn in precision bearings. Only by applying heat directly to this area is it possible to provide the instant starting and smooth operation of the camera in cold weather that we get when using it on the sound stage."

"After trying several approaches to the problem, we finally settled on a dual-heating element, which heats the camera mechanism at two points," Arnold added.

This heater element is shown at A in the accompanying photo of the Mitchell camera interior. Inside this unit are two small 6-volt heater elements, similar to those used in automobile dashboard cigaret lighters. These are positioned inside the heater tube at B and C. Element B heats camera shaft E, while element C provides heat for camera shaft D.

Power for the heating elements is provided by an ordinary 6-volt automobile storage battery. This is a decided advantage for two reasons: 1) the need to work close to a 110-volt power source is negated, and 2) the storage battery may readily be charged on location by a garage or filling station.

As various temperature conditions are encountered, a thermostat mounted on the camera mechanism, as shown at F, provides means for setting the desired operation temperature and also maintains the temperature at a constant level. It will be noted that the thermostat is so mounted as to control the temperature of the camera mechanism rather than the interior temperature of the camera.

The installation, which consists only of the two units just described, is a simple one. It is unnecessary to alter the Mitchell camera interior in any way nor to drill and tap holes, except for the battery lead wires. The two brackets, designed especially to fit over the bearing housing at D, are fastened by means of the four original screws used at this point. The lead wires from the thermostat extend through a tiny light-proofed hole at top of the camera where they terminate in a small quick-detachable plug mounted on the camera exterior. When the heater unit is to be used, the power line from the storage battery is connected at this point.

The Arnold camera heater, for which patent application has been filed, is now standard equipment at Metro-Goldwyn-Mayer studios, where it is installed on all of the company's cameras. The unit is adaptable to just about every make of studio camera in use throughout the world today. Since the heater was first announced, Arnold has received inquiries from cameramen in all parts of the world.

A.S.C. PRESENTS SCROLL

(Continued from Page 247)

president Clarke and executive vice-president Fred W. Jackman, reads:

"In recognition of outstanding achievement, the American Society of Cinematographers confers this award of honor upon the 'I Love Lucy' show. This show, starring Lucille Ball and Desi Arnaz, photographed by Karl Freund, A.S.C., has brought to video audiences a continued series of scintillating entertainment. The Society is proud to salute you for the preeminent comedy-drama program of the year."

Before the selected sequence of the show was re-enacted, it was handled as a new show about to be filmed. The rehearsals, considerably condensed, were done, then the three dolly-mounted Mitchell cameras used in photographing the show were lined up. The set lighting was then arranged by director of photography Karl Freund, and the action "photographed" in a dry run of the cameras. An interesting feature also was the demonstration of the company's unique cueing system whereby instructions are given the camera operators and other technicians as the show progresses by the script girl assisting director Marc Daniels.

Earlier, Freund addressed the visitors and explained how the company arrived at its present method of lighting and photographing the program as a live show. He explained why it was necessary to have more or less fixed set lighting overhead, with no lamps on the floor, in order to afford a clear stage for unobstructed movement of the three cameras. (See "Filming the 'I Love Lucy Show'," January, 1952, American Cinematographer.—EDITOR.)

Freund stated that a total of 85 people were involved in filming each weekly show, and that as many as eighty focus changes are made during the filming.

Desi Arnaz, president of Desilu Productions, and co-star of the show, also exhibited the unique triple-head Moviola which was specially constructed for the company, and which affords rapid editing of the footage from the three cameras. With this equipment, Arnaz said, it is possible to obtain a complete rough cut of a show in one day.

FILM DEVELOPING OUTFIT

(Continued from Page 249)

Companion equipment consists of an automatic, motor-driven film drying rack, also pictured here. A strip-heater, located directly beneath the cage, supplies sufficient heat to speed the drying of the film. The unit will dry a roll of film in ten minutes.

To permit film to contract naturally while drying, without any danger of distorting the images, each cross arm of the rack rests on two springs which give the rack the necessary flexibility. The rack is easily assembled or knocked down for carrying. The motor supplied is 110-volts, A.C., although motors for other voltages are available.

Prices for drying rack range from $65.00 to $125.00, depending upon models and film capacity. The Micro Record film processors are available in two models — D-11, which takes up to 200 feet of double-8mm, 16mm or 35mm film, and sells for $159.00, and D-21, which takes up to 100 feet of 70mm or 35mm film.

CINEMATOGRAPHY REVIEWS

(Continued from Page 240)

movie Hollywood has made to date. Dailey can thank Fox for giving him this juicy role plus an excellent script made to order for his exceptional talents; but he should be—and undoubtedly is—especially grateful to director of photography Tover for the fine job of lens work that contributes so much to making this picture Dan Dailey's best to date.

Television Film Production

By LEIGH ALLEN

MAY PRODUCTION ACTIVITY: The following cinematographers were actively engaged in Hollywood during the past month directing the photography of television films:

ROBERT DE GRASSE, A.S.C., "Amos 'N Andy" series for CBS-TV, at Hal Roach Studios.

JACK GREENHALGH, A.S.C., 26 half-hour "Ramar of The Jungle" series pictures at KTTV studios, for Arrow Productions.

JOHN MARTIN, "Wild Bill Hickok" series of half-hour telepix at Sunset Studios, for Wm. Broidy Productions.

ROBERT PITTACK, A.S.C., "Lone Ranger" series of half-hour telepix at General Service Studios for Jack Chertok Productions.

LUCIEN ANDRIOT, A.S.C., "Rebound" series of half-hour adult dramas at RKO-Pathe Studios, for Bing Crosby Enterprises.

KARL FREUND, A.S.C., "I Love Lucy," half-hour comedy series at General Service Studios, for Desilu Productions.

LESTER WHITE, A.S.C., "Dangerous Assignment," half-hour adventure series at Goldwyn Studio, for Donlevy Development Corp.

KENNETH PEACH, A.S.C., "Family Theatre" series of half-hour dramas at Jerry Fairbanks Studios.

JAMES VAN TREES, A.S.C., "Groucho Marx Show," half-hour comedy series at NBC Studio, for Filmcraft Productions.

WILLIAM BRADFORD, A.S.C., "Annie Oakley" series of half-hour westerns for Flying A Productions.

JOHN BOYLE, A.S.C., "Big Town" series of 26 half-hour dramas at General Service Studios, for Gross-Krasne, Inc.

LEONARD CLAIRMONT, "Man Of Tomorrow," series of 15-minute telepix for Hour Glass Productions.

WILLIAM SICKNER, A.S.C., "File Of Jeffrey Jones" series at KTTV Studios, for Lindsley Parsons Productions.

ELLY FREDERICKS, series of half-hour adult dramas at Eagle Lion Studios, for Revue Productions.

WALTER STRENGE, A.S.C., "Mystery Theatre" series, also the "My Little Margie" series of telepix at Hal Roach Studios, for Roland Reed Productions.

JOE NOVAK, series of westerns at Goldwyn Studios, for Roy Rogers Productions.

HAROLD STINE, Telescriptions series for Snader Telescriptions.

STUART THOMPSON, A.S.C., "Electric Theatre" series at Eagle Lion Studios, for Screen Televideo Productions.

ELMER DYER, A.S.C., "Craig Kennedy—Crimnologist," series of half-hour adventure telepix at Key West Studios, for Adrian Weiss Productions.

BENJAMIN KLINE, A.S.C., "Fireside Theatre" series at Eagle Lion Studios, for Frank Wisbar Productions.

CURT FETTERS, "Cisco Kid" series of half-hour telepix for Ziv TV Productions.

NORBERT BRODINE, A.S.C., "Racket Squad" series of half-hour telepix at Hal Roach Studios, for Showcase Productions.

HENRY FREULICH, A.S.C., series of half-hour TV dramas at Motion Picture Center, for Edward Lewis Productions.

GORDON AVIL, series of "Frontier Detectives" western mysteries for Murphy-Thomas Productions at General Service Studios.

HENRY FREULICH, A.S.C., "Samuel Morse" half-hour dramas for Screen Gems.

JACK MAC KENZIE, A.S.C., "Boss Lady" series of half-hour comedies for Wrather Television Prods. Inc.

ALAN STENSVOLD, "Smilin' Ed's Gang" half-hour juvenile adventure pictures for Frank Ferrin Productions.

FRED GATELY, A.S.C., series of 15-minute telepix with Art Linkletter for John Guedel Productions.

FRED JACKMAN, JR., A.S.C., series of half-hour telepix for Fred Jackman, Jr., Productions, General Service Studios.

CLARK RAMSEY, "Ramar Of The Jungle" half-hour adventure telepix for Arrow Productions.

VIRGIL MILLER, A.S.C., "The Phantom Pirate" half-hour telepix for William F. Broidy Prods.

MACK STENGLER, A.S.C., "Beulah" series of half-hour TV comedies for Roland Reed Productions at Hal Roach Studios.

DAN B. CLARK, A.S.C., the "Unexpected" series of half-hour telepix for Ziv Productions.

JACK GREENHALGH, A.S.C., "This Is The Life," half-hour series of telepix for Family Films, Beverly Hills, Calif.

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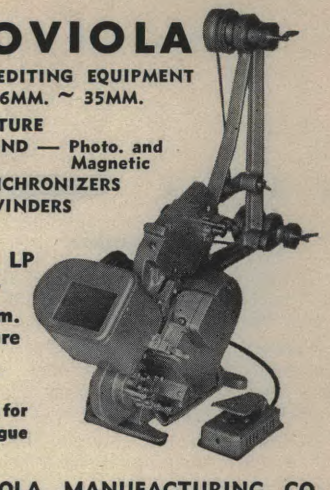
Fred Jackman, Jr., A.S.C., has resumed independent production of television films at General Service Studios and is directing the photography on his initial series of half-hour dramas.

(Continued on Page 271)



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Current Assignments of A.S.C. Members

Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month.

★ ★ ★ ★

Columbia

- Henry Freulich, "Jack McCall, Desperado," (Technicolor) with George Montgomery, Angela Stevens. Sidney Salkow, director.
- William Bradford, "Blue Canadian Rockies," (Gene Autry Prod.) with Gene Autry and Gail Davis. George Archainbaud, director.
- Henry Freulich, "Ttarget—Hong Kong," with Richard Denning, Richard Loo and Phil Ahn. Fred F. Sears, director.

Metro-Goldwyn-Mayer

- William Daniels, "Plymouth Adventure," (Technicolor) with Spencer Tracy, Gene Tierney, Van Johnson. Clarence Brown, director.
- Joseph Ruttenberg, "The Prisoner Of Zenda," (Technicolor) with Stewart Granger, Deborah Kerr, James Mason. Richard Thorpe, director.
- Robert Surtees, "Tribute To A Bad Man," with Lana Turner, Kirk Douglas, Walter Pidgeon. Vincente Minnelli, director.
- Ray June, "Sky Full Of Moon," with Jan Sterling, Carelton Carpenter, Keenan Wynn. Norman Foster, director.
- Paul C. Vogel, "Rogue's March," with Peter Lawford, Janice Rule. Allan Davis, director.
- Hal Rosson, "I Love Melvin," with Donald O'Connor, Debbie Reynolds, Dean Miller. Don Weis, director.
- William Mellor, "The Naked Spur," (Technicolor) with James Stewart, Robert Ryan and Janet Leigh. Anthony Mann, director
- John Alton, "Apache Trail," with Gilbert Roland, Barbara Ruick. Harold F. Kress, director.

Monogram

- Harry Neumann, "Army Bound," with Stanley Clements, Karen Sharpe, and Mona Knox. Paul Landres, director.
- Ernest Miller, "The Maverick," with Wild Bill Elliott, Phyllis Coates, Myron Healey. Thomas Carr, director.
- Harry Neumann, "Flat Top," (Technicolor) with Sterling Hayden, Richard Carlson, Keith Larsen. Leslie Selander, director.

Paramount

- George Barnes, "Road To Bali," (Technicolor) with Bob Hope, Bing Crosby, Dorothy Lamour. Hal Walker, director.
- Daniel Fapp, "Pleasure Island," with Leo Genn, Don Taylor, Audrey Dalton. F. Hugh Herbert, director.
- Ernest Laszlo, "Scared Stiff," (Hal Wallis Prod.) with Dean Martin and Jerry Lewis. George Marshall, director.
- Lionel Lindon, "The Stars Are Shining," (Technicolor) with Anna Maria Alberghetti, Rosemary Clooney and Lauritz Melchoir. Norman Taurog, director.

AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes nonresident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

•

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- Harry Stradling, "Hans Christian Andersen," (Technicolor) (Samuel Goldwyn Prod.) with Danny Kaye, Farley Granger and Jeanmarie. Charles Vidor, director.
- Harry Wild, "Beautiful But Dangerous," with Jean Simmons, Robert Mitchum. Lloyd Bacon, director.
- William Snyder, "Blackbeard The Pirate," (Edmund Grainger Prod.) with Linda Darnell, Robert Newton. Raoul Walsh, director.

20th Century-Fox

- Harry Jackson, "Pony Soldier," (Technicolor) with Tyrone Power, Penny Edwards. Joseph M. Newman, director.
- Charles G. Clarke, "Stars And Stripes Forever," (Technicolor) with Clifton Webb, Ruth Hussey. Henry Koster, director.
- Leo Tover, "My Wife's Best Friend," with Anne Baxter, Macdonald Carey, Casey Adams. Richard Sale, director.
- Leon Shamroy, "Tonight We Sing," (Technicolor) with Ezio Pinza, Roberta Peters. Mitchell Leisen, director.
- Edward Cronjager, "Bloodhounds Of Broadway," (Technicolor) with Mitzi Gaynor, Scott Brady. Harmon Jones, director.
- Joseph LaShelle, "Something For The Birds," with Patricia Neal, Victor Mature, Edmund Gwenn. Robert Wise, director.
- Leo Tover, "Big Man," with Richard Widmark, Joanne Dru, George Winslow. Robert Parrish, director.
- Milton Krasner, "Bagdad On The Subway," with Fred Allen and Oscar Levant. Howard Hawks, director.
- Arthur Arling, "The Farmer Takes A Wife," (Technicolor) with Betty Grable, Dale Robertson, Thelma Ritter. Henry Levin, director.
- Joseph MacDonald, "Niagara," (Technicolor) with Joseph Cotton, Jean Peters, Marilyn Monroe. Henry Hathaway, director.

Universal-International

- Charles Boyle, "City Beneath The Sea," (Technicolor) with Robert Ryan, Suzan Ball. Budd Boetticher, director.
- Carl Guthrie, "Bonzo Goes To College," with Edmund Gwenn, Gigi Perreau and Charles Drake. Frederick de Cordova, director.
- Cliff Stine, "Willie and Joe Back at the Front," with Tom Ewell, Harvey Lembeck. George Sherman, director.
- Russell Metty, "Magic Lady," with Loretta Young, Jeff Chandler, Alex Nicol, and Frances Dee. Joseph Pevney, director.
- Irving Glassberg, "Gun Hand," (Technicolor) with Rock Hudson, Julia Adams, John McIntire. Roaul Walsh, director.
- Maury Gertsman, "The Great Companions," (Technicolor) with Dan Dailey, Diana Lynn, Chet Allen. Douglas Sirk, director.
- Winton Hoch, "Cattle Kate," (Technicolor) with Maureen O'Hara, Alex Nicol, Jeanne Cooper. Lee Sholem, director.

Warner Brothers

- Wilfrid Cline, "April In Paris," (Technicolor) with Doris Day, Ray Bolger. David Butler, director.
- John Seitz, "The Iron Mistress," (Technicolor) with Alan Ladd, Virginia Mayo," Joseph Calleia. Gordon Douglas, director.
- Edwin DuPar, "The Springfield Rifle," (Warner-Color) with Gary Cooper, Phyllis Thaxter. Andre DeToth, director.
- Archie Stout, "Big Jim McClain," (The Fifth Corp.) with John Wayne, Nancy Olson, Jim Arness. Edward Ludwig, director.
- Robert Burks, "The Desert Song," (Technicolor) with Kathryn Grayson, Gordon MacRae, Raymond Massey. Bruce Humberstone, director.

Independent

- Ernest Laszlo, "Panic Stricken," (Thor Prod. for 20th-Fox) with Joseph Cotton, Teresa Wright. Andrew Stone, director.
- Joseph Biroc, "The Glass Wall," (Shane-Tors Prods. for UA) with Vittorio Graham, Gloria Grahame. Maxwell Shane, director.

NOTE: Names of A.S.C. Directors of Photography who were engaged in the photography of films for television last month will be found in the "Television Production column" on page 269.

TELEVISION FILM PRODUCTION

(Continued from Page 269)

James VanTrees, A.S.C., having wound up the filming of the present series of Groucho Marx TV shows, will photograph the pilot film of the coming Fred Allen TV show, reportedly to follow same format as the Groucho Marx show, with audience participation, etc., and to be filmed with multiple cameras.

•

Walter Strenge, A.S.C., during the past twelve months has amassed a total of 150 screen credits—mostly on television films. During this period he has directed the photography on the following series of TV films for Roland Reed: "Beulah Show," "Mystery Theatre," "Space Ranger," "Stu Irwin Show," and the "My Little Margie," half-hour comedy show.

In between these assignments, he photographs the numerous industrial and public relations films which Roland Reed produces for many of the nation's leading business firms.

•

Hal Roach, veteran movie producer, now operating the busiest TV studio on the west coast, believes that production by Hollywood's seven major studios of short films for television for free home viewing can absorb 50 per cent of the studios' operating costs, help build stars and increase theatre attendance with fewer but better full-length movies, according to columnist Erskine Johnson, following an interview with Roach.

•

Concerned over the "growing shift of television film production from New York to Hollywood," the New York Board of Trade reportedly has taken steps to stem the tide westward and prevent the loss of an important segment of local motion picture film production. A TV committee has been formed to study the situation.

•

Karl Freund, A.S.C., director of photography of the "I Love Lucy" TV film shows, is experimenting with a new type indirect lighting equipment, said to be designed to meet his particular set lighting problems.

JOHN R. BISHOP, assistant head of Paramount studio's camera department since 1945, has succeeded Ray Wilkinson as head of the department. Latter resigned his post last month.

TECHNICOLOR Motion Picture Corp. is installing equipment that will enable the company to handle both Ansco Color and Eastman color films, in addition to Technicolor.

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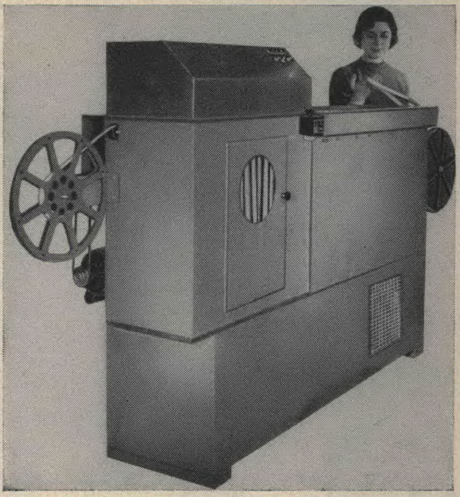

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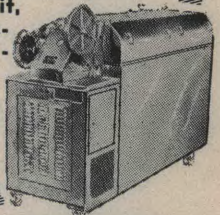

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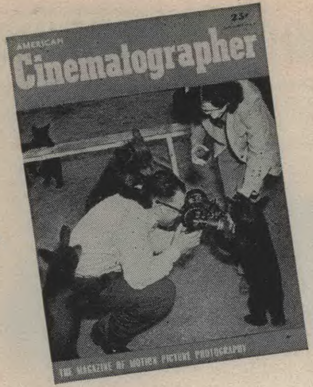

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WHAT'S NEW
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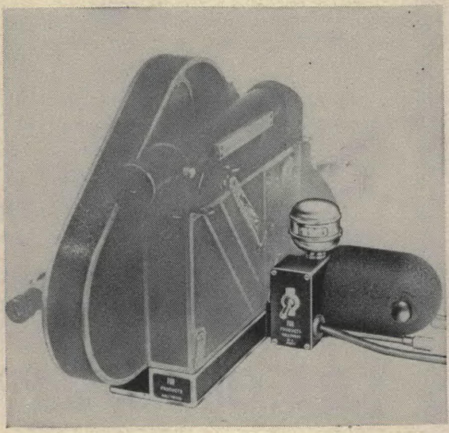
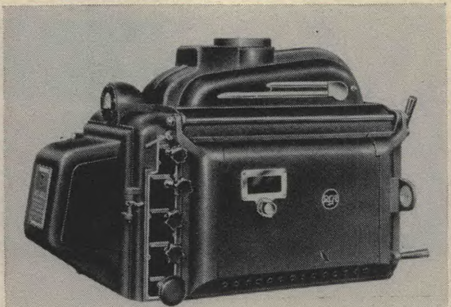
Cine Special Motor Drive—PAR Products Corp., 926 No. Citrus, Hollywood 38, Calif., offers a new, universal motor drive designed especially for the Cine Special camera. It delivers the same torque to camera mechanism as the fully wound spring motor.

Motor, light and compact, is strong enough to drive the camera when equipped with the PAR 400-ft. film magazine.



It can be easily removed to permit use of the spring motor drive, if desired. A reversing switch for backwinding is also available as optional equipment. Controlled speeds give range of 8-64 f.p.s. operation. Motor may be operated from a battery pack or any DC source. Use of AC current is possible with adapter. Complete data and price may be had by writing manufacturer direct.

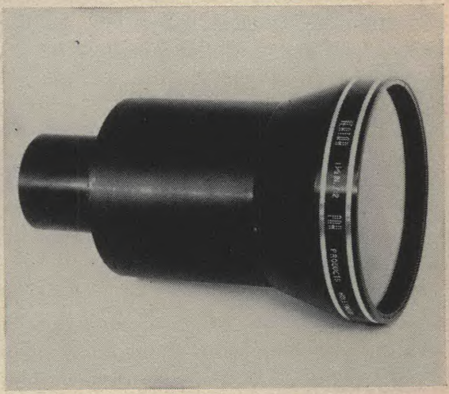
R.C.A. Hy-Arc Lamp—New projection lamp, the RCA Hy-Arc, has light output of 18,000 lumens, operates with a 9mm x 20" hi-intensity carbon at 70 to 90 amps. Also features magnetic stabilization; water-cooling 15" reflector; and rapid dissipation of heat. Mfgr. is RCA Victor Div., Radio Corp. of Amer., Camden, N.J.



Amplifier-Mixer—Kinevox, Inc., 116 So. Hollywood Way, Burbank, is now in production on an entirely new amplifier-mixer—a self-contained unit having its own power supply. It provides high-level mixing; 4-position dialogue equalozer; interphone to the recording room; buzzer, etc.—all built in.

Input and output impedances are provided for connection to all standard microphones and associated equipment. For full data and price, write manufacturer direct.

Rear Projection Lens—PAR Products Corp., 926 No. Citrus, Hollywood 38, Calif., announce the Vertar rear projection lens for either 16mm or 35mm use. Lens features optical design that orients image side-to-side without auxiliary optics, minimizes "hot spot," and has a short focal length permitting use of valuable space. Throw of the Vertar for 35mm projection is only 1.4 times picture width.



Because of these and other exclusive features it is expected lens will find wide use also in television for background and process shots.

Titles and Optical Effects—Ray Mercer & Company, 4241 Normal Ave., Hollywood, have expanded facilities to service TV film producers with optical effects and titles. One of the oldest established firms in the business, the company has been supplying optical effects and titles to Hollywood's independent and major producers for more than 20 years. Company also services clients in the TV, industrial and feature film industries in other centers of the U.S. Titles and effects for the award-winning TV film show, "Fireside Theatre," were produced by the company.

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CARBON ARCS

(Continued from Page 251)

intensity at any distance. Data bearing on this point, as compiled by Mole-Richardson Co., manufacturers of arc lighting equipment, are given in Fig. 1. The greater concentration of the beam at minimum spot more than offsets the smaller light collection, and results in greater beam candlepower than at wider beam spreads.

The color quality of the light source is a paramount consideration in motion picture photography. This quality in a high-intensity carbon arc makes it suitable directly or with only minor filtering when shooting with color film balanced for daylight. With film balanced for lower color temperatures, more red than green, and more green than blue light is required; thus a white light source when used with such film must have a substantial portion of its blue and green content removed.

As an example, with a black body at 3350° K., the blue content is exceeded by the green content by about twice, and by the red content about three times. Matching this radiation with a white light source, or one with approximately equal energy at all wavelengths, requires filtering of an order which will diminish by at least two-thirds the blue content and by one-third the green radiation inherent in the light source. This filtering represents a theoretical light loss of about one-third.

With color films definitely on the upswing, the following summary of the present state of the art relative to particular types of color film should prove of interest:

150 Foot-candle Film Balanced for 3350° K.: As a complementary to this discussion, the assumption here is that a deep amber filter of about 50% foot-candle transmission will serve to utilize carbon arc light for this type of film. The type of gelatin filter combination now being used with Technicolor film of this type matches these characteristics; however, a much higher degree of light transmission is quite possible, as aforementioned. Also directly suitable for this are inkies of the proper color temperature.

300 Foot-candle Film Balanced for Daylight: Present studio practice, based on extensive tests, indicates that a light-yellow Y-1 filter effecting 90% light transmission will enable the use of carbon arc lamps with this film. By way of contrast, incandescent lamps of 3350° K. color temperature must utilize deep blue filters having only about a 40% light transmission value.

450 Foot-candle Film Balanced for Daylight: Penetrating power, which makes possible the projection of *useful* light intensities from great distances with a single lamp, has long been an outstanding advantage of carbon arc studio lighting. Projectionists well understand that, with a given lamp setting, the inverse square law dictates that the light decreases rapidly with increasing distance.

Now, it follows that if a lamp be placed close to a set having any appreciable depth, the ensuing light intensity will vary en route across the set. There is only one answer to this problem—a light source with enough penetrating power to permit its positioning farther away from the set so that set depth becomes a *smaller fraction* of the projection throw.

This penetrating power (projection throw) of the different lamps *for the same photographic effect* at the center of the beam is indicated in Fig. 3. Figures in the tables show the distances at which the lamps considered, with proper filtering, will project 150, 300, and 450 foot-candles of light intensity for the three types of film mentioned previously.

Now we come to the crux of this presentation. Fig. 3 shows that with the beam spread adjusted for minimum spot, the indicated intensities will be projected about three times as far as when the lamp is set for full flood. We see here that at minimum spot the most powerful carbon arc will project the indicated intensities more than 180 feet for the 150 foot-candle film, and more than 170 feet for the 300 foot-candle filb.

By way of contrast, it will be noted the most powerful inkie tungsten lamp (the "Senior") is much lower in penetrating power than the most commonly used arc lamp, the type 170, when used with the 3350° K. type film. Where the carbon arc and the inkie emphatically part company, to the distinct advantage of the former, is with the use of the 300 and the 450 foot-candle daylight type color film, by reason of the more favorable filter factors. In this category none of the inkie lamps even approach the light output of *any* of the carbon arcs.

Fig. 3 also shows the requisites for coverage of depth of the set — that is, the range of projection distance which can be effectively lighted within plus or minus minus 20% of the specified light intensity in a given case. It is seen that the more powerful carbon arc lamps and the small beam spreads are required to achieve this degree of light uniformity on sets deeper than 25 feet. It is always possible, of course, to use a number of lesser-intensity units at the same distance to attain the equivalent light uniformity across the set; but this procedure might sometimes result in undesirable multiple shadows.

(Continued next month)

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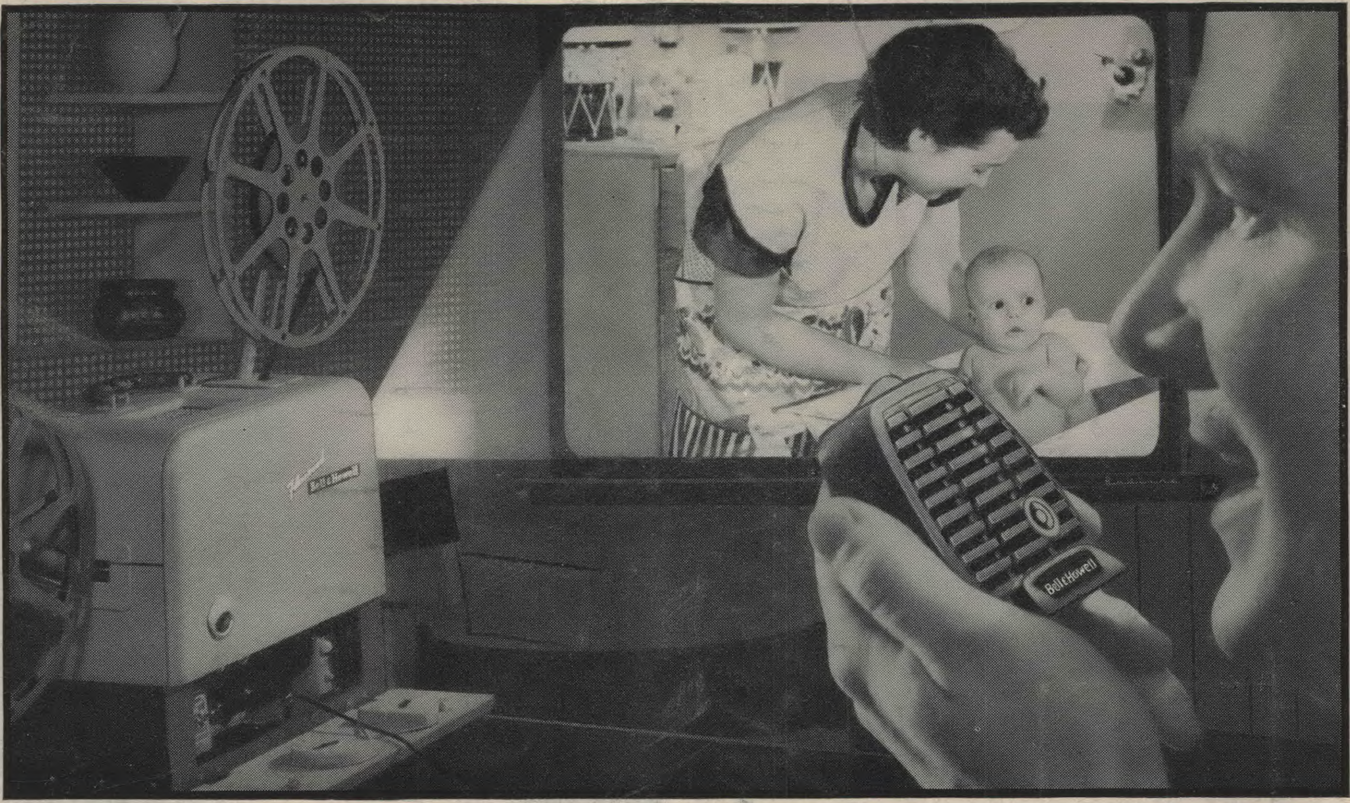

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